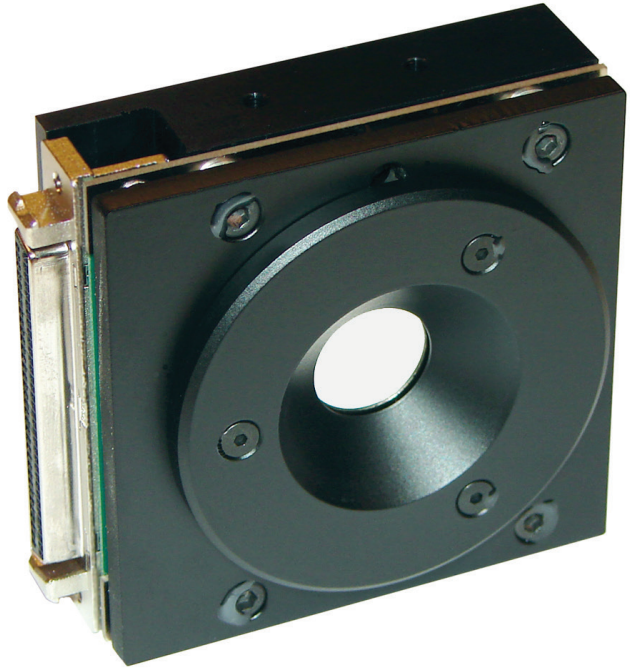# mirao 52-e

ELECTROMAGNETIC
LARGE-STROKE DEFORMABLE MIRROR

HIGH PRECISION
DOWN TO 7NM RMS IN CLOSED-LOOP

HIGH REFLECTIVITY
FOR PHOTON-HUNGRY APPLICATIONS

COST-EFFECTIVE
GREAT PRICE/PERFORMANCE RATIO

LARGE-STROKE DEFORMABLE MIRROR, BEST SUITED FOR CLOSED-LOOP APPLICATIONS

A UNIQUE SET OF ADVANTAGES

- Perfectly suited for fast-changing bio-imaging applications, ophthalmology, laser beam shaping *etc*.

- Exceptional closed-loop precision reaching 7nm RMS

- Easy implementation in custom-built optical setups

- Virtually no hysteresis (<2%)

- Nearly perfect linearity (>95%)

- 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
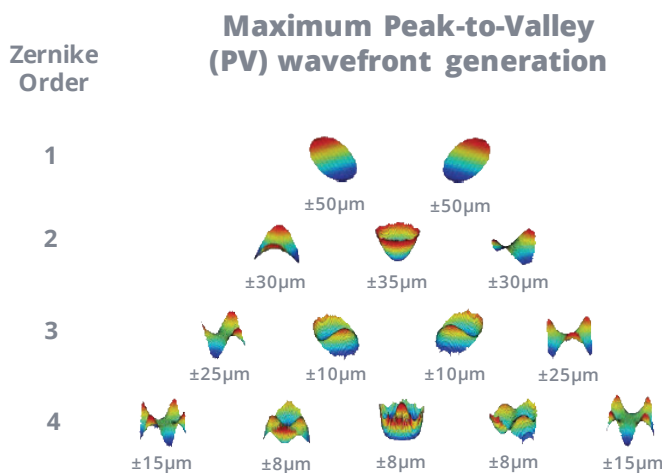
- Optional dust-proof protection

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

imagine optic™

mirao 52-e

LARGE-STROKE DEFORMABLE MIRROR DESIGNED FOR CLOSED-LOOP APPLICATIONS

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 52e 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, microscopy and ophthalmology applications where large-amplitude aberrations must be corrected.

In addition to its excellent optical quality, high linearity and lack of hysteresis, Mirao 52e can be used in a wide spectral range and has a high intensity threshold, which also makes this deformable mirror a great candidate for various beam shaping applications.

Mirao's electronic unit connects to the PC via USB port. There is also a trigger output available to facilitate synchronization with other devices via TTL signal.

Together with Mirao 52e we offer a free Application Programming Interface (API) which was developed to provide easy access to Mirao's powerful wavefront correction abilities. In addition to that we developed a complete Software Development Kit (SDK), which includes a timesaving collection of high-level functions so that users can quickly develop their own software. We offer the SDK in C, C++, LabView and Python environments.

Maximum Peak-to-Valley (PV) wavefront generation

Zernike Order

1		±50µm	±50µm	
2		±30µm	±35µm	±30µm
3	±25µm	±10µm	±10µm	±25µm
4	±15µm ±8µm	±8µm	±8µm	±15µm

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
Maximum generated wavefront (PV)	±50 µm
Surface quality (rms active flat)	<10 nm
Integrated tip/tilt correction	Yes
Spatial frequency correction	Zernike orders up to 6
Effective diameter	15 mm
Linearity	> 95%
Hysteresis	< 2%
Actuator input voltage	±1V maximum
Coatings	Protected Silver
Power consumption	50W max
Dimensions / weight	64 x 64 x 23 mm / 490g *
Connectivity	USB 2.0
Operating System	Windows 7 and 10

* Mirror unit only

www.imagine-optic.com