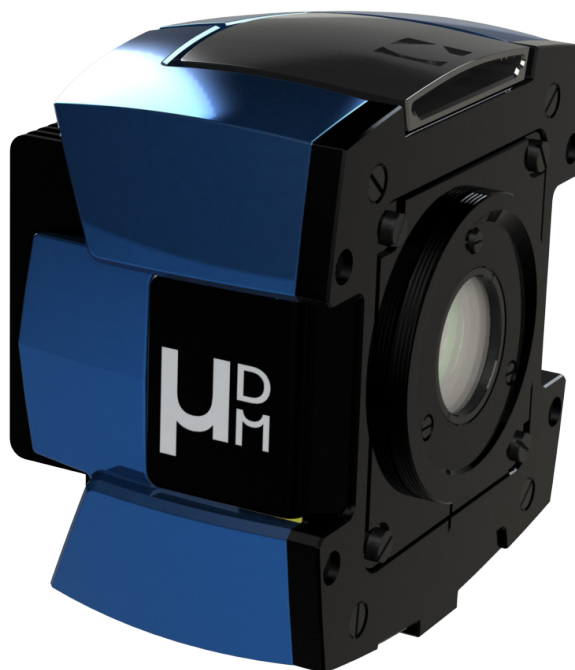





mu-DM

Deformable mirror **The High-end**

High dynamic range, linearity & stability
Embedded electronics
High actuator density



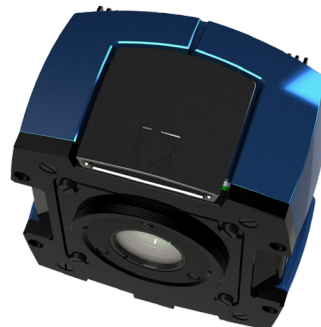
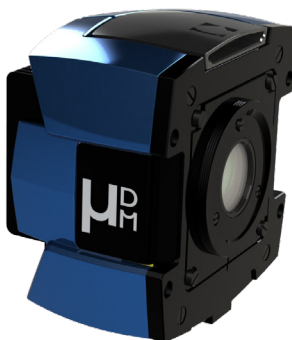
Boost your imaging
performance :
Adaptive Optics made
easy and efficient.

APPLICATIONS

- + **Ophthalmology** : Explore retinal cells at high resolution (contact our sister company Imagine Eyes for more informations)
- + **Microscopy** : Image deeper in your sample and/or navigate in 3D (for more details visit mu-Imagine website, our division dedicated to microscopy)
- + **Quantum applications**
- + **Beam shaping**
- + **Laser microengraving**
- + **Education**

FEATURES

- + **Fast closed-loop convergence and accurate sensorless correction** with perfect linearity and absence of hysteresis
- + **Preserved photon budget** with achromatic, highly reflective and continuous membrane
- + **Long-term stability** with temporal drift automatic compensation
- + **Large dynamic range** with 50% of actuators stroke still available while generating 40 microns PtV of focus
- + **Fine timing control** with trigger-in and trigger-out features
- + **Easy integration** with electronics embedded in a single-piece design and connection via a USB3 cable
- + **Correction up to 10th Zernike order** thanks to optimized actuator layout



SPECIFICATIONS

OPTICAL SPECS

Surface quality
Coating
Linearity
Hysteresis

7 nm RMS (Optional : down to 4 nm RMS)
Protected silver
> 99.5%
< 0.1%

OPERATING SPECS

Number of actuators
Maximum generated wavefront (PV)
- 1 actuator
- 7 actuators
Effective diameter
Spatial frequency correction
Rise time
Max frequency
Temporal stability

91
> 10 μm
> 50 μm
15 mm
Zernike orders up to 10
2.4 ms
Typically 300 Hz
< 15 nm RMS over 12h

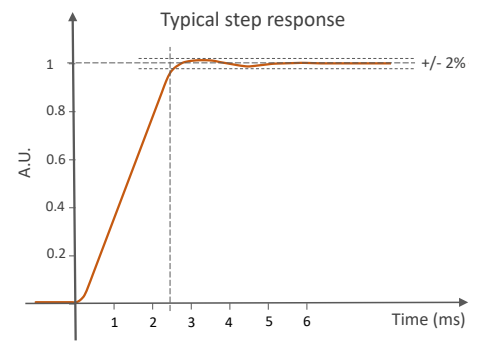
MISC

Dimension / Weight
Working temperature
Interface / Power consumption

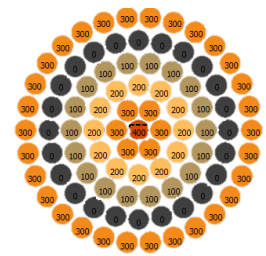
93.8 x 98.3 x 67.2 mm³ / 185 g
19-25°C
USB 3.0 / 30 W

OPERATING SYSTEM

Windows 10



Optimized temporal control achieves a settling time of 2.4 ms with minimal over-shoot (< $\pm 2\%$)

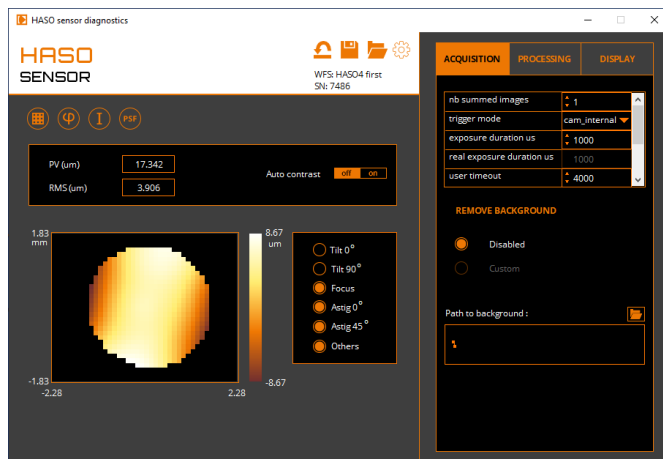


SOFTWARE

WAVETUNE

WAVETUNE is a unique software that seamlessly combines wavefront measurement and correction features with extensive instrument diagnostics.

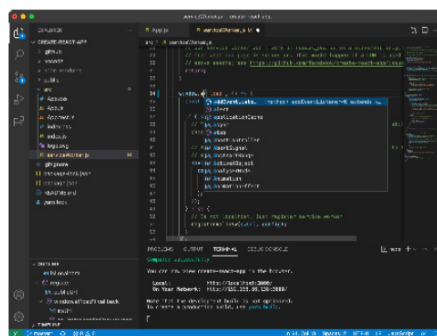
This software contains all the necessary tools to calibrate the Deformable Mirror (DM). It can also operate the DM in closed-loop with HASO wavefront sensor, as well as in open-loop and perform beam shaping.



WAVEKIT BIO

WAVEKIT BIO is a Software Development Kit (SDK), available in C++ and Python, specifically designed for microscopy applications.

In particular, it contains all the necessary functions to implement sensorless AO, using image-based iterative algorithms (e.g. 3N).



MOUNTING & ACCESSORIES

Several mounting options are available, including adaptors for the most common mechanical stages, to simplify integration of μ DM into an optical setup.



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