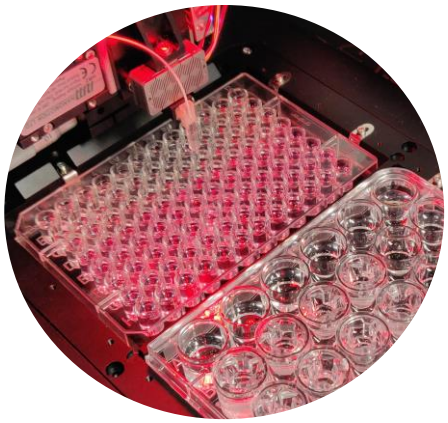
OPTICS11 PAVONE

Are you interested in studying the mechanics of large sets of biosamples such as tissues or cells, but lack the analytical tools?

The Optics11 Pavone is designed to meet this challenge by providing a fully integrated indentation, imaging and incubation system. It enables to combine high-precision mechanical interrogation with any type of microscopy in a highly controlled environment, allowing fast and easy data collection.

- Assess functional mechanical properties of any soft (bio)sample
- Environmental control to support long-timespan experiments
- Supports all open culture formats including well plates and dishes



Optical imaging + micromechanical characterization + incubation

The Pavone finds applications in research and quality control, primarily in the life science field. Being 96-well plate compatible, the Pavone enables the quantification of large sample sets for the first time. Applications include:

- Tissue or cell pathology: clarify the role of mechanics in disease
- Cell biophysics: unravel mechanosensing phemomena at the cell level
- Tissue or cell physiology: capture structure-function relationships
- Tissue engineering: quantify engineered tissue mechanics over-time

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The Pavone can be equipped with all sorts of microscopy modes including phase-contrast, fluorescence, confocal or more specific modes. Having three optical ports, different modes may be combined. Almost all optical parts are interchangeable, providing maximum flexibility to fit any application.

With capacity for up to two well plates, complex experimental procedures can be performed including quantitative, cleaning and functionalization protocols.

Technical specifications

Optics

Design	Up to 60x, interchangeable
Focus	Motorized (5nm resolution)
Optical ports	2 C-mount, 1 general
Compatibility	Phase-contrast (standard)
	Fluorescence (optional)
	Confocal (optional)

Mechanics

Probe force range	20 pN – 2 mN
Contact size diameter	1 micron up to 100 microns
Movement range	120 x 190 mm (max. 2 well plates)
Compatible formats	All common dishes/plates (up to 96 wells)
Speed	Up to 500 points / hr
Modes of interrogation	Quasi-static indentation (E / G)
	Step-response (Creep / Stress-Rel.)
	Dynamic / oscillatory (E' E")
Frequeny range	0.1 – 100 Hz

System design

Temperature	Ambient to 40 °C $^{+}/_{-}$ 0.5 °C
Humidity	Ambient up to 70 % (optional)
CO2	Yes (optional)