

MPX-SERIES MULTI-PHOTON MICROSCOPES

EXTENDED CAPABILITIES -TURN-KEY, FLEXIBLE, MULTIMODAL, COMPACT

And the

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TRULY TURN-KEY WORKS OUT OF THE BOX UPRIGHT AND INVERTED

Unstained healthy human lung cryosection (single-photon setup, 16x, 0.8 NA, 11,3 x 7 mm) – overlay of 432 nm (blue), 515 nm (green) and 681 nm (red).

MULTI-PHOTON, SINGLE-PHOTON, BRIGHTFIELD

The MPX-series is a truly turn-key, integrated, compact, easy-to-use, maintenance-free and easy-to-install imaging platform which offers refinded multimodality. The user does not need to worry about laser alignment, detection efficiency, non-compatible or misaligned hardware over time. It can easily be operated even by non-experts. The built-in multimodality combination of imaging capabilities allows more features for correlative microscopy of any system available. Once the sample is positioned the user is allowed to switch modalities, resolution and imaging level (micro or macro) without changing the device.

The novelty of the MPX-series is in the compact integration of the light sources combining detection modules and beam handling optics. This enables a new perspective for exploring multimodal microscopy.

Researchers can move the microscope to different locations and scan positions in space – also inverted and horizontal configuration of the scanhead is possible. The modular and flexible layout can be upgraded at a later stage and ensures that extra features can be added over time on the same platform.

OUTSTANDING FEATURES

- Modern and highly integrated design: turn-key, all main components designed and supported in-house.
- One device for three modalities, micro and macro level sample sizes and different resolutions – Multimodality at its best!
- System works out of the box plug & play.
- Compact form-factor no optical table required.
- Optics permanently aligned.
- Free-moving scanhead also with inverted or horizontal configuration allows unlimited application possibilities.

Scanhead and controller box are connected through a flexible umbilical. The compact scanhead can be rotated and translated in any direction, enabeling a broad spectrum of multi-photon-based imaging – covering application areas from microscale level up to live whole animal imaging.

All components contained within these units are rigidly fixed. The controller on wheels incorporates a built-in high performance PC together with electronic and photonic devices. Only a power cord, keyboard, mouse and display need to be connected to the controller box to be completely operational.

UPGRADABLE STANDARD VERSIONS

The MPX-series multi-photon multimodal imaging platform is based on a modular concept. We offer three standard models where each can be upgraded with various options and accessories, as well as entirely custom designed setups - to completely maximize the utility. This offers every user the unique flexibility to design a multi-photon microscope tailored to their specific need and budget.

		MPX-10	040 MPX-920	F MPX-Tune*
1 st wavelength fixed:	1040 nm	\checkmark	\checkmark	\checkmark
2 nd wavelength fixed:	920 nm (others upon request)	Optior	nal 🗸	Х
2 nd wavelength tunable:	740 - 1150 nm	Х	Х	\checkmark
Resonant - galvo-galvo scanning module		Optior	nal Optional	Optional
Single-photon fluorescence modality		Optior	nal Optional	Optional
Brightfield Epi-modality		Optior	nal Optional	Optional



SOFTWARE SOLUTION

The pre-installed software allows the collection of more reliable data in less time. Windows 10 scripts are customized to automate workflows and integrate external image analysis applications (e.g. ImageJ, Fiji, Matlab, µManager) into every process. Laser scanning is controlled by ScanImage by Vidrio – the world leading scan software.

The software provided will be customized to optimize procedures, data analysis and overall usability.

It's your choice!

GAIN INSIGHTS WITH THE REVOLUTIONARY MPX-SERIES

DAPI-stained healthy mouse knee cryosection (multi-photon setup, 25x, NA 1.0, 700 µm) – overlay of 2P-460 (blue), SHG-515 nm (green) and 2P-542 nm (red).

Multi-photon scanhead

- Built-in femtosecond fiber laser
- Built-in PMTs (up to 4 channels)
- Piezo objective scanner optional
- Motorized 3-position turret
- Well-suited for high NA low magnification objectives

Translation

• 3 - 5 axis stages allow scanhead rotation and translation in 3D

Cockpit

 Easy access to individual settings and workflows

Controller

- Stand-alone controller with handles and wheels
- Air cooled
- High performance PC
- High resolution display
- Software, mouse and keyboard included*
- 90 230 VAC input,
- <800 W power consumption
- Umbilical between controller and scanhead (2 m)

FREE-MOVING SCANHEAD



The free-moving scanhead allows imaging of a broad variety of samples. Custom designed motion control solutions upon request.

Multi-photon signal detection

- Software controlled transimpedance amplifiers, individually configurable in bandwidth, gain, offset, low-pass filter
- Up to 4 ultrasensitive GaAsP PMTs, non-cooled (Epi-detection)
- Filters individually and manually changeable
- Maximum of 4 PMTs controlled by ScanImage
- 12° collection angle

Single-photon fluorescence imaging

- Software controlled motorized switching between built-in multi-photon, fluorescence and brightfield imaging modalities
- Fully software controlled and built-in lightsource with 8 channels
- Pre-installed and configured µManager



Unstained autofluorescence sunflower seed (multi-photon setup, 16x, 0.8 NA).

EU

Prospective Instruments LK OG 6850 Dornbirn, Austria Email contact@p-inst.com www.p-inst.com

SWITZERLAND

Prospective Instruments GmbH 8105 Regensdorf, Switzerland Email contact@p-inst.com www.p-inst.com

USA

two-level systems Allentown, PA, 18101 Email info@two-levelsystems.com www.two-levelsystems.com

CHINA

Sinsi Technology Co., Ltd. Chaoyang District, Beijing 100013, China Email info@sinsitech.com www.sinsitech.com

Leads Bio-Technology Limited Minhang District, Shanghai 201107, China Email info@leads-tech.com www.leads-tech.com

INDIA

Atos Instruments Marketing Services Bangalore, Karnataka– 560035, India Email atos@atosindia.com www.atosindia.com

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TAIWAN

Biochiefdom International Co., Ltd. New Taipei City, 23147, Taiwan Email info@bio-chief.com.tw www.bio-chief.com.tw



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