SANE
European Imaging Solutions

InVi-SPIM

LUXENDO
the light-sheet company

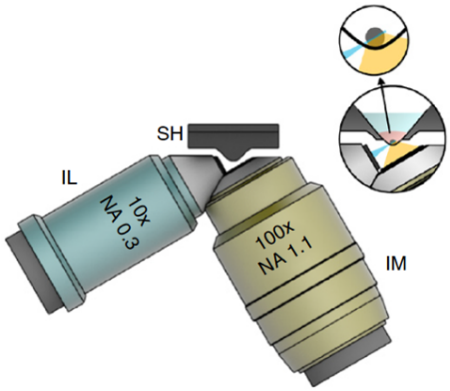
Seeing Upside Down

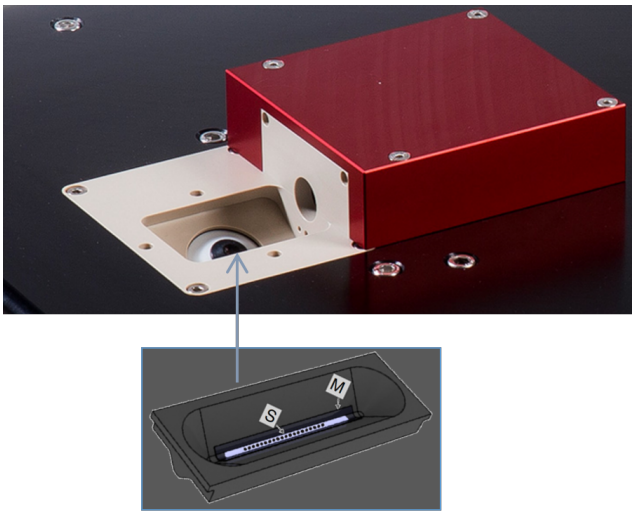
Very High Imaging Speed
Maximized Photo-efficiency
Close-to-Confocal Resolution
In Toto Imaging of Small Animal Models
Whole Mouse Embryos, Mammalian Cell Culture
Long-term 3D Fluorescence Imaging of Live Specimens

InVi-SPIM

Invi-SPIM system is dedicated to live imaging. It is configured as an inverted microscope that has been optimized for long-term 3 D fluorescence imaging of living specimens. Easy access to the sample chamber, maximized photo-efficiency, and short illumination times enable long-term imaging without harming live specimens.

The optical configuration combined with the fast acquisition speed of InVi-SPIM enables 3D reconstruction, tracking of cellular and subcellular positions, and morphological analysis in real time.

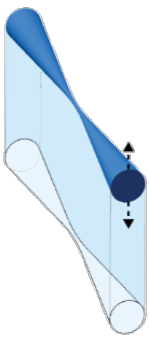




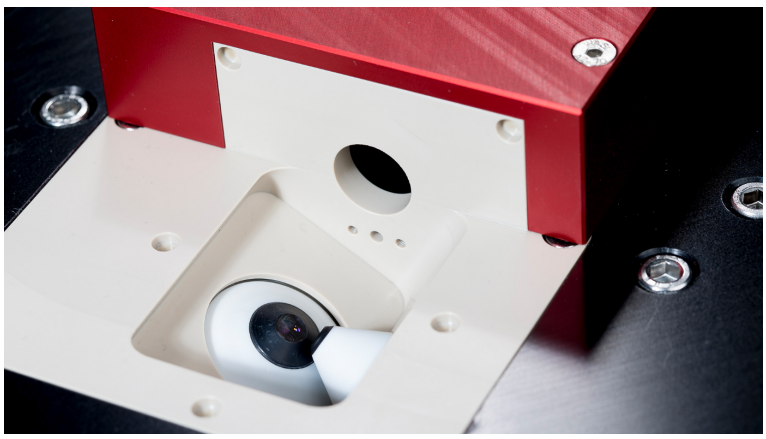
Sample Holder, Strnad et al, Nature Methods 2015

InVi-SPIM system use scanned light sheet technology, with adjustable light sheet thickness of 2-8 um and flexible sheet area. It also have 2 detection modes: Area mode for fast and high sensitivity imaging, and Line Scanning Mode for background suppression.

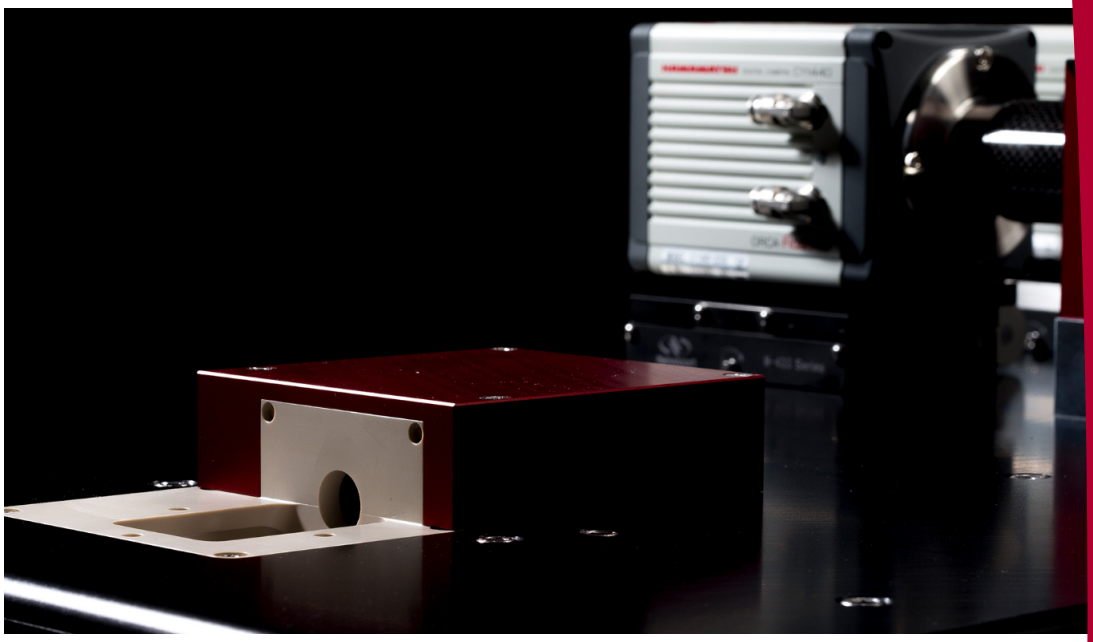
Area Mode



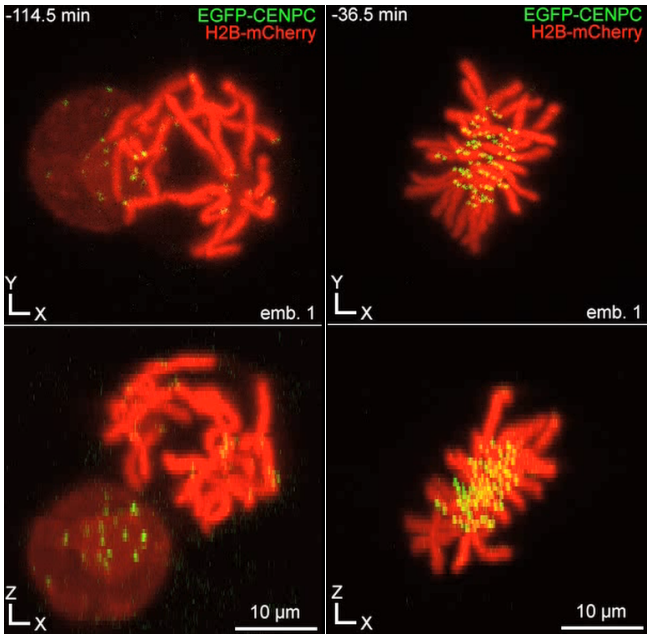
Line Scanning Mode



The InVi-SPIM provides an unique autoclavable, biologically inert sample chamber with accurate temperature control and optional environmental control. Sample can be easily accessed for patch clamp, photoactivation and/or photoablation.



Typical applications of InVi-SPIM are in toto imaging of small animal models such as whole mouse embryos, imaging of dynamic processes in mammalian cell culture applications, and even live imaging of intact and living plant models.



The cell division process of a mouse to study Aneuploidy, images taken at -114.5 and -36.5 mins on both x-y and x-z direction by InVi-SPIM system.

More movies can be viewed in SANE ASIA YouTube channel.

Fast Imaging

With highly sensitive sCMOS cameras, InVi-SPIM system can achieve 140 fps @ 512 x 2048 px.

Inverted Microscope Configuration

The system concept provides easy access to the sample for mounting and manipulation.

Controlled Environment

Autoclavable, biologically inert sample chamber, accurate temperature control, optional environmental control.

Flexible Configuration

Customizable laser combination, light sheet thickness and accessories.

Specifications

Laser	Laser combiner with six laser positions
	445, 488, 515, 532, 561, 594, 642, and 685nm @ 50mW
	Fast modulation and high extinction
	Chromatic correction from 440 to 660 nm
	Light-sheet generation by beam scanning
	Variable light-sheet thickness (optional)
Detection Optics	Water-dipping objective lenses
	Fast filter wheels with 10 positions and 50ms between adjacent positions
	Illumination objective: 10x @ 0.3 NA, water immersion
	Detection objective: 25x @ 1.1 NA, water immersion
	High-speed sCMOS camera Hamamatsu ORCA-Flash 4.0
Sample Chamber and Stage	Water-sealed inert PEEK plastic chamber, autoclavable and biocompatible
	Sample supported from below for improved stability
	Easy access from above for sample mounting etc.
	Fast and precise temperature control, range 15-40°C
	Environmental Control (optional)
	3cm long sample holder
System Control	Embedded microscope software with open communication interface
	Open GUI control for interface control and microscope automation
	High-speed RAID controller for data streaming
	HIVE High Speed Centralized Data System (Optional)

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