

## Living Cell Microscopy With Lattice LightSheet

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### Abstract

Lattice LightSheet (LLS) is a cutting-edge light sheet microscope built for cell biologists. The system generates an optical lattice to create an ultra-thin light sheet to image biological samples over long periods of time and with very fine resolution. This allows for 4D live cell imaging, where experiments limited to seconds or minutes on other imaging platforms can be extended to hours or even days.

The system is user-friendly, offering a fiber-coupled 6-line laser launch, Vector2 photomanipulation (for FRAP, photoactivation, photoconversion, and uncaging), inverted epi-fluorescence path, brightfield LED, multiple cameras, and custom filter options. LLS is also a potent structured illumination (SIM) microscope, enabling dynamic live cell super-resolution experiments. The combination of high spatiotemporal resolution, high sensitivity, and the low light dose makes the Lattice LightSheet the ultimate imaging tool for a new era of living cell microscopy.

In this workshop, we will highlight the imaging performance, SIM capabilities, photomanipulation and ease-of-use of the Lattice LightSheet on a variety of samples.

