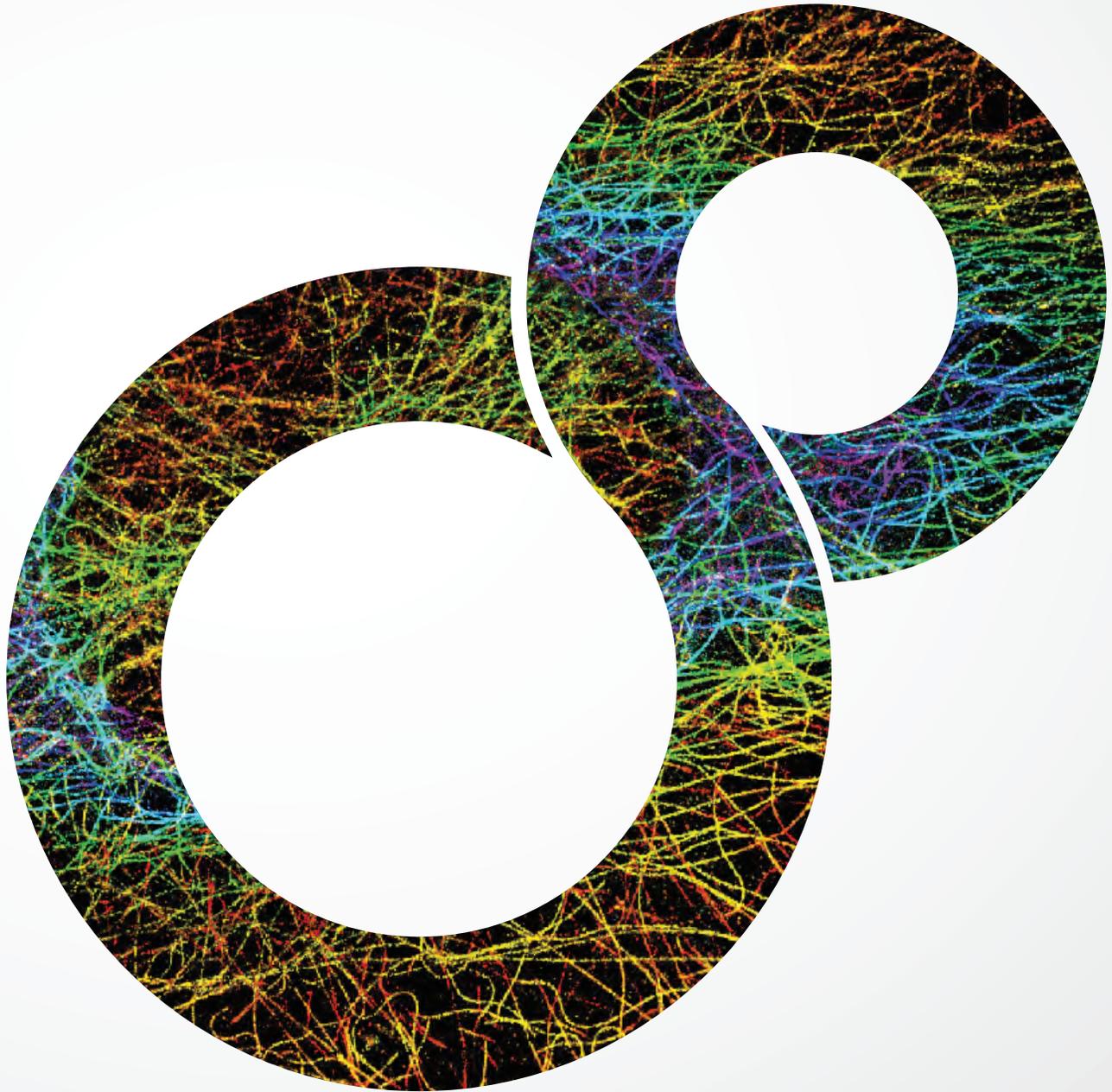


DoubleHelix[®]



Discover in 3D

· Add unprecedented depth and
· precision with Double Helix Optics' 3D
· nanoscale imaging and tracking system
·

SPINDLE®

Double Helix Optics' award-winning SPINDLE family enables easy capture, analysis, and tracking of multicolor 3D images of cellular structures down to the single molecule level, as well as extended depth whole-cell imaging.

- Seamlessly extend the capabilities of your microscope for nanoscale 3D and extended depth imaging and sensing.
- Swap between wavelengths, depth ranges, or modalities, without realignment.
- Add or swap additional filters, polarizers, or other optics, further extending experimental range.



Modular design. Upgrade any wide-field microscope. Built-in bypass mode allows easy return to non-3D experiments.

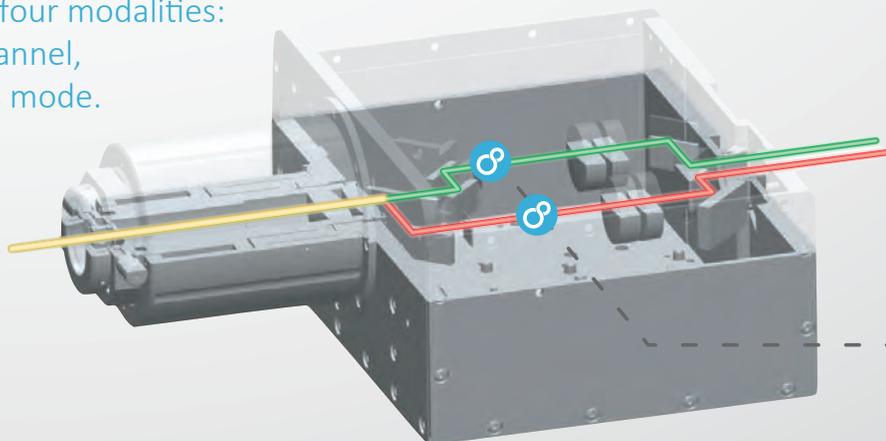
Choose SPINDLE or SPINDLE²

The SPINDLE² offers all the capabilities of the SPINDLE plus the ability to:

- Study multiple cellular dynamics simultaneously.
- Reduce cost and complexity by imaging two paths with a single camera.
- Combine modalities including 3D single molecule, extended depth, polarization, and widefield in a single experiment.

Features	SPINDLE	SPINDLE ²
Real-time single-shot extended depth imaging	●	●
Up to 30X single shot depth range of conventional clear aperture objective	●	●
Corrective optics simplify installation between camera and microscope	●	●
STORM, PALM, FRET, SOFI, extended depth of field, and more	●	●
Simultaneous multicolor imaging		●
Track fiducials to merge multiple captures extending range even further		●
Combine and register two channels on a single camera		●

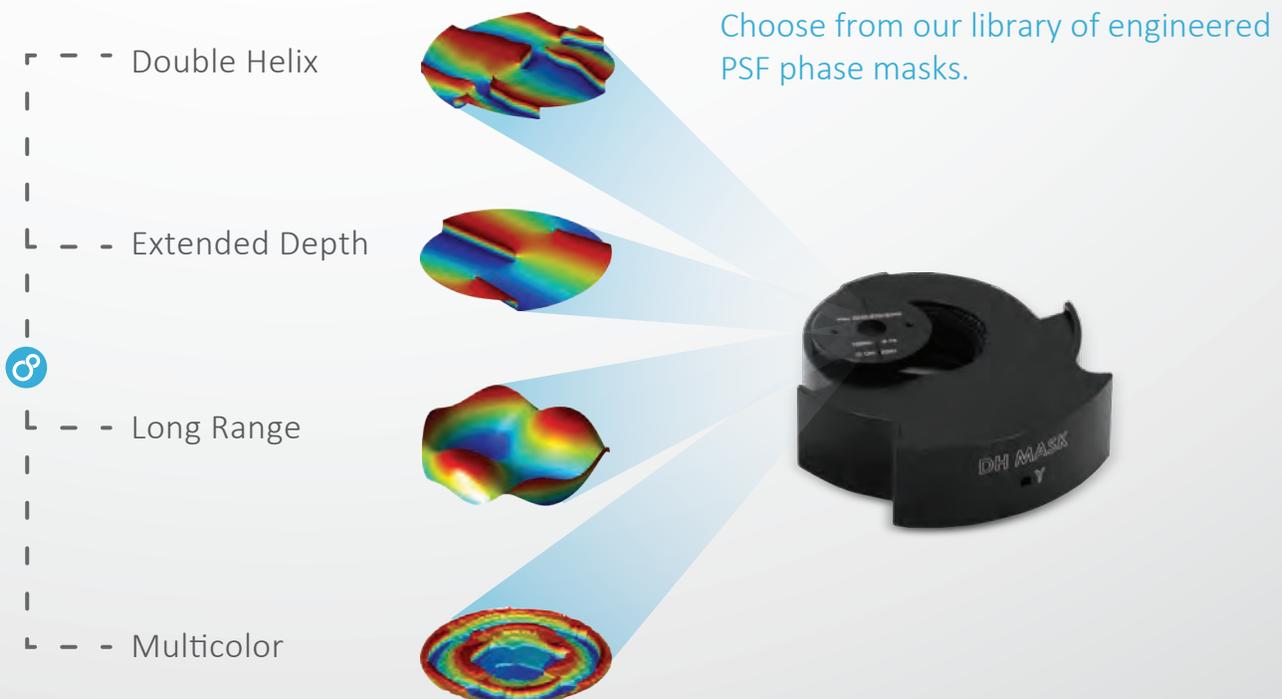
Easily switch between four modalities: two channel, single channel, multi-focus, or by-pass mode.



Engineered Phase Mask Library

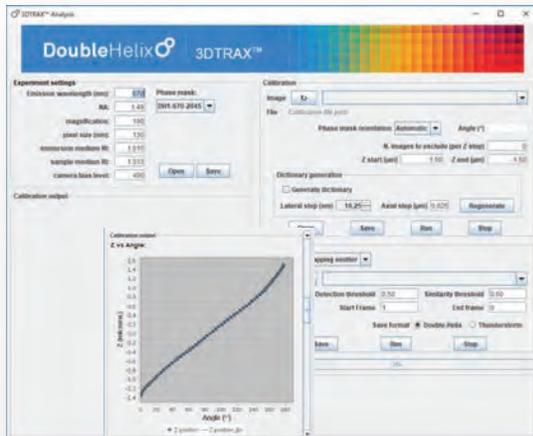
Our library of interchangeable phase masks ensures you can optimize the SPINDLE or SPINDLE² to your whole-cell, localization, or tracking experiments. While you maintain control and flexibility over your experiment, each mask ensures the best precision-depth combination to match your investigative needs.

- Patented point spread function (PSF) technology for 3D localization down to 25 nm axial precision, 20 nm lateral precision.
- Choose depth ranges, emission wavelengths, and optical parameters to achieve the ideal balance for your imaging needs.
- Image larger volumes, minimizing or eliminating time and effort required for axial scanning or stitching.
- Capture longer particle tracks otherwise lost with conventional depth of field optics.

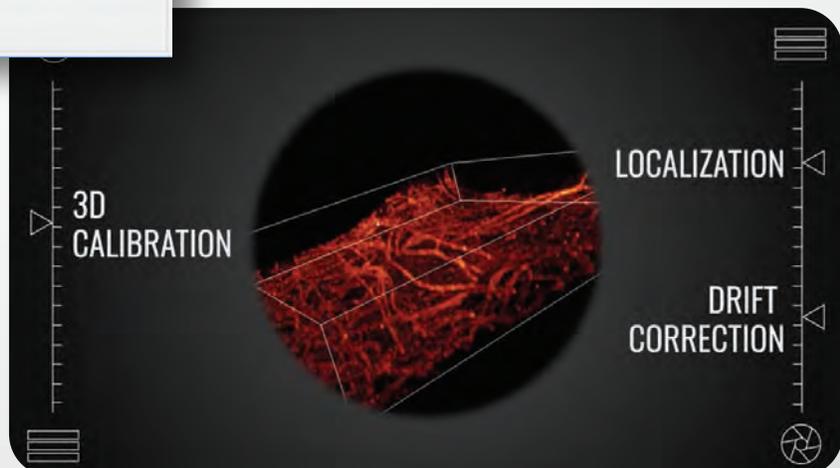


3DTRAX™ Software

- Modules available for 3D SMLM, 3D tracking, and extended depth whole-cell imaging.
- SMLM module calculates the position of every particle, using multiple proprietary algorithms to automate 3D localization and render precise 3D images with unprecedented depth and resolution.
- 3D tracking localizes and tracks multiple particles over the entire extended depth range of the PSF.
- Whole-cell extended depth imaging sees deeper into the sample without additional Z-scanning.
- Automated drift correction, available in all modules, preserves image quality in real-world conditions.
- Export image data in ThunderSTORM or Double Helix file formats for further analysis.



3DTrax is an easy-to-use
FIJI/ImageJ plug-in

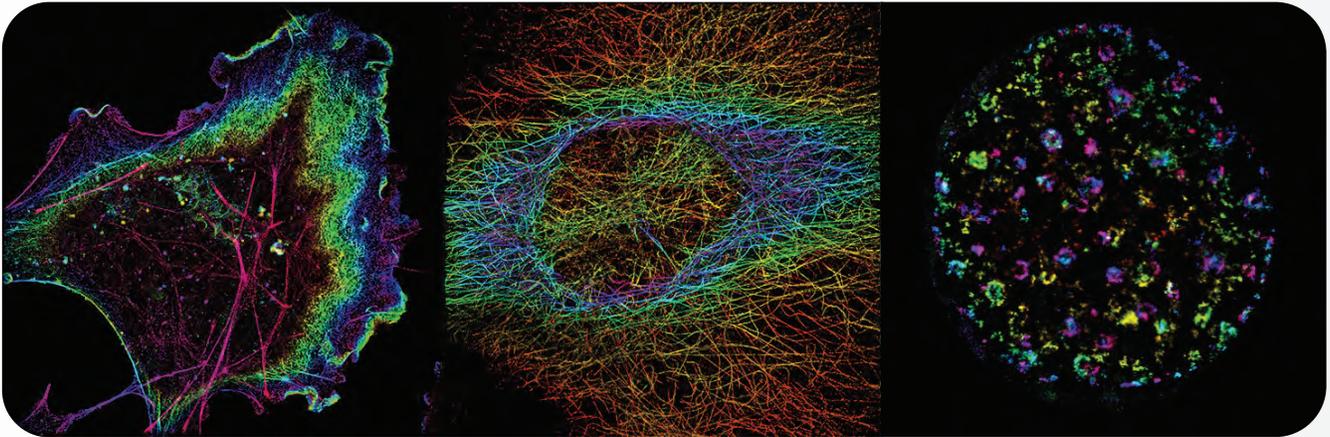


“

We expect the DH-PSF optics will become a regular attachment on advanced microscopes, either for 3D super-resolution imaging of structure, or for 3D super-resolution tracking of individually labeled bio-molecules in cells or other environments.”

Professor W.E. Moerner | Nobel laureate,
Stanford University

3D Super-resolution Images using Double Helix SPINDLE
Depth encoded in color



Actin cytoskeleton of an African green monkey kidney cell

Microtubules in a mouse embryo fibroblast

Replicating DNA in the nucleus of a mouse embryo fibroblast cell

About Double Helix Optics

Double Helix Optics enables visualization and data capture of objects at an unmatched depth and precision quality. Its Light Engineering™ point-spread function-based technology is advancing the field of 3D imaging, allowing for new discoveries in research and new capabilities of promise to a range of applications. The SPINDLE², SPINDLE®, engineered phase masks, and 3DTRAX™ software are currently in use by globally recognized scientists.

DoubleHelix 

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