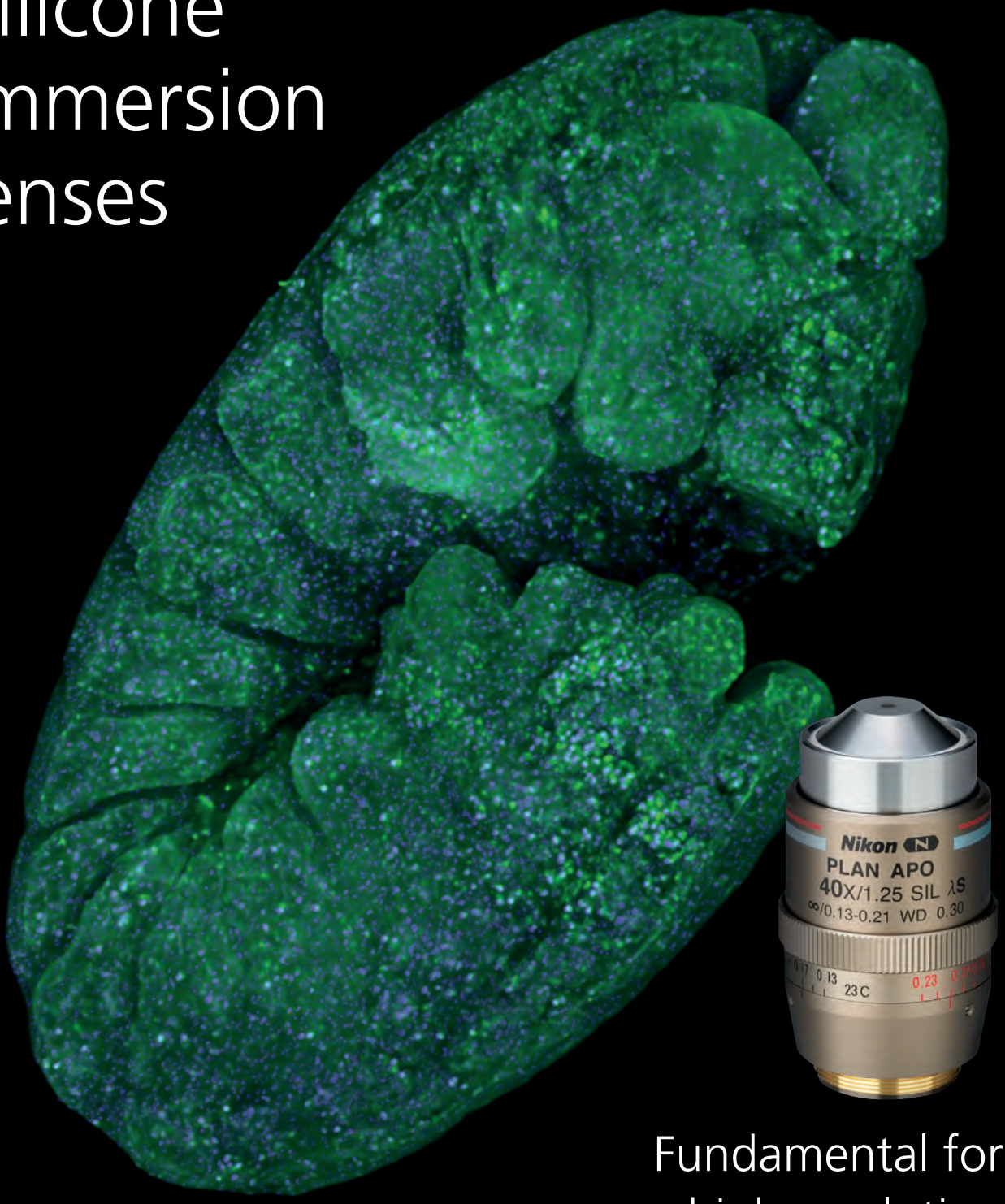
Silicone immersion lenses



Drosophila sp. embryo with multicolor staining, image supplied by Dr. Jennifer Allee from North Central College and captured with A1R HD25 (resonant scanner)

Fundamental for high resolution live-cell imaging

Silicone immersion lenses

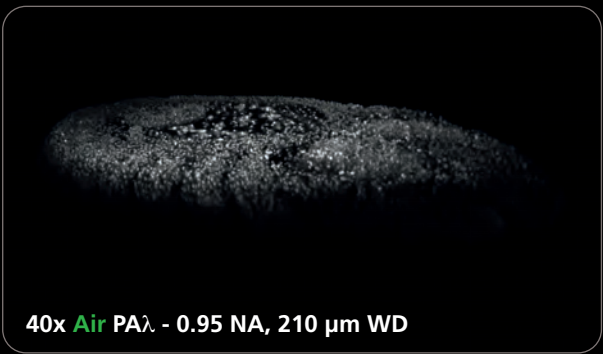
Objective lenses that provide superior depth and resolution performance for biological imaging by more closely matching the refractive index of cells and tissues.

- Ideal for live-cell applications, especially complex 3D structures
- Bright, aberration-free, high-resolution imaging at incredible depths
- More accurate morphological and intensity based quantifications
- Perfect for long-term, time-lapse, real-time experiments
- Suitable for 25mm FOV and with excellent spectral correction

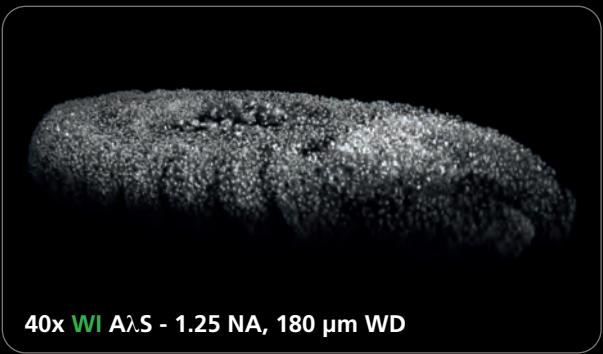
Application areas

Regenerative Medicine | **Cell Biology** | **Developmental Biology** | **Neurobiology**

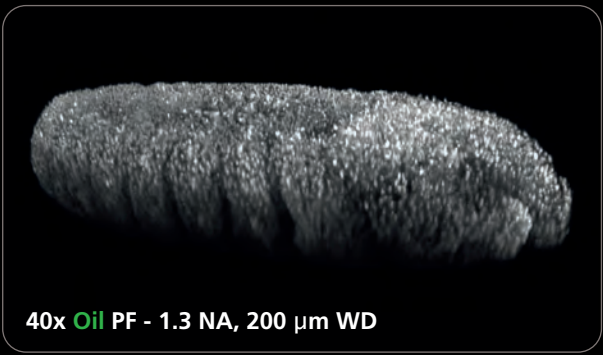
Superior depth and resolution performance for biological imaging



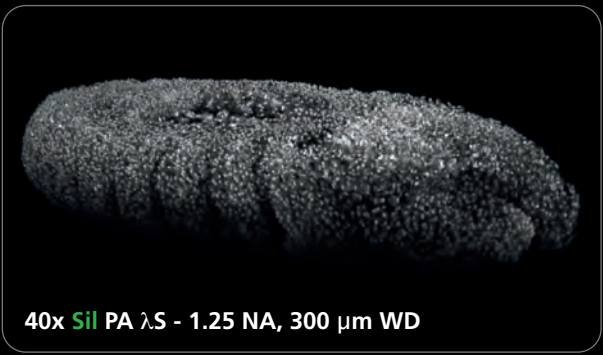
40x Air PAλ - 0.95 NA, 210 µm WD



40x WI AλS - 1.25 NA, 180 µm WD



40x Oil PF - 1.3 NA, 200 µm WD



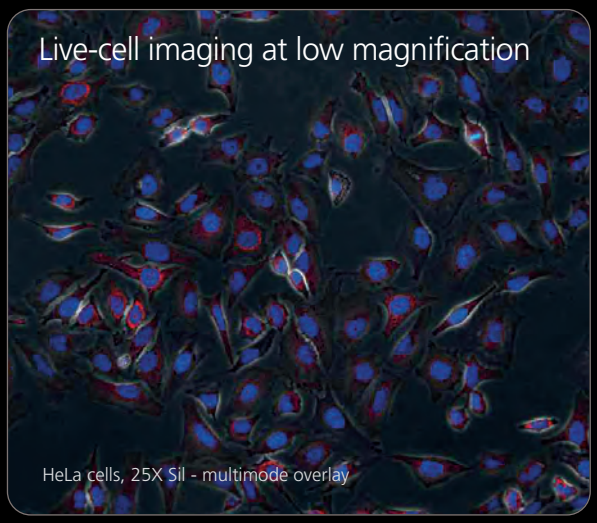
40x Sil PA λS - 1.25 NA, 300 µm WD

Drosophila sp. embryo with DAPI stained nuclei, supplied by Dr. Jennifer Sallee, North Central College. Images are taken with A1R HD25 (resonant scanner)

Do you struggle with imaging deep into the tissue or missing crucial cellular level detail?

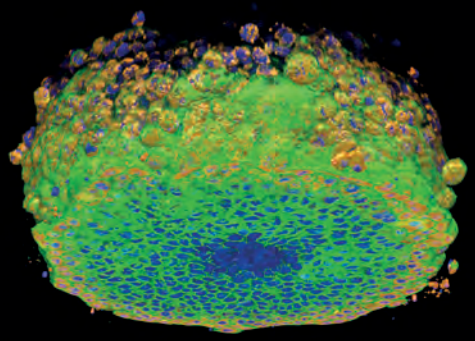
- Exceptional brightness at depth, resolution and aberration-free images
- Specially designed for live-cell imaging in spheroids, organoids, embryos, zebrafish and tissue slices where cellular details are required
- Enhance 3D imaging by increasing z-stack deconvolution results in both widefield and confocal microscopy
- Multiple magnifications provide an easy and practical way to switch in various types of live-cell imaging experiments

Live-cell imaging at low magnification



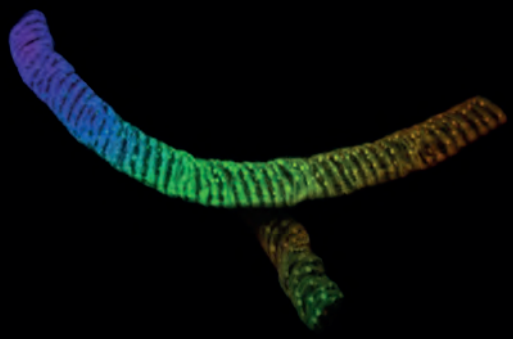
HeLa cells, 25X Sil - multimode overlay

Fixed cell imaging at low intermediate magnification



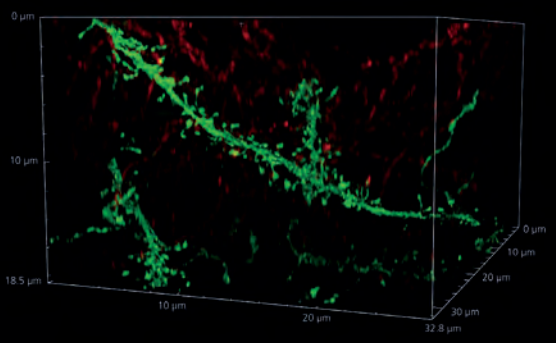
Spheroid HT29, 40X Sil - DAPI, Tubulin and MT-Orange (deconvolved)

Fluorescence imaging with low signal



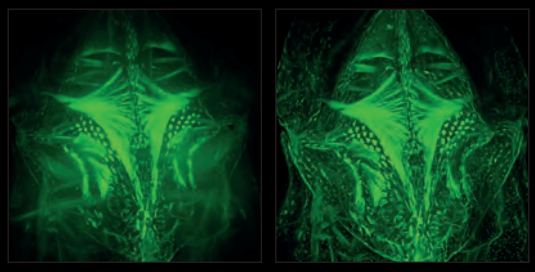
Spirogyra, Ti2-E W1, autofluorescence (sample mounted in glycerol)

Fixed cell imaging at high magnification



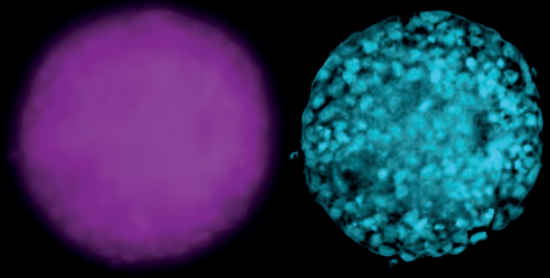
Neuronal dendrites, A1-R-HD25, 100X Sil – Spectrin (deconvolved)

Spinning disk



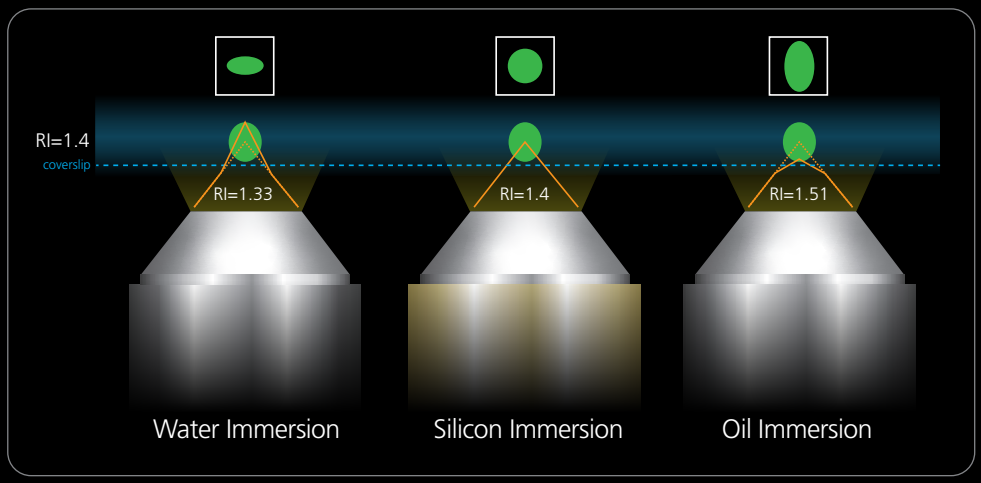
Daphnia stained with Eosin (left 40X Air and right 40x Sil after deconvolution), supplied by W. B. Amos, MRC Laboratory of Molecular Biology, Cambridge

High Content Screening



Spheroid CX26, 40X Sil - DAPI raw image (left) and deconvolved (right)

Silicone vs Water or Oil



Matching of sample and immersion media refractive indexes (RI) for water (left), silicon (middle) and oil (right), respectively.

Silicone immersion lenses

Model	 Lambda S 25XC Sil	 Lambda S 40XC Sil	 Lambda S 100XC Sil
NA	1.05	1.25	1.35
W.D. (mm)	0.55*	0.3*	0.30* (0.31 - 0.29) (23˚C) 0.29* (0.30 - 0.28) (37˚C)
Cover glass thickness	0.11 - 0.23	0.13 - 0.21 (23˚C) 0.15 - 0.23 (37˚C)	0.15 - 0.19
Correction ring	v	v	v
Observation	BF, DF, DIC, POL, FL (visible light, UV)	BF, DF, DIC, POL, FL (visible light, UV)	BF, DIC, POL, FL (visible light, UV)

Request a demonstration and experience image acquisition at an unprecedented level