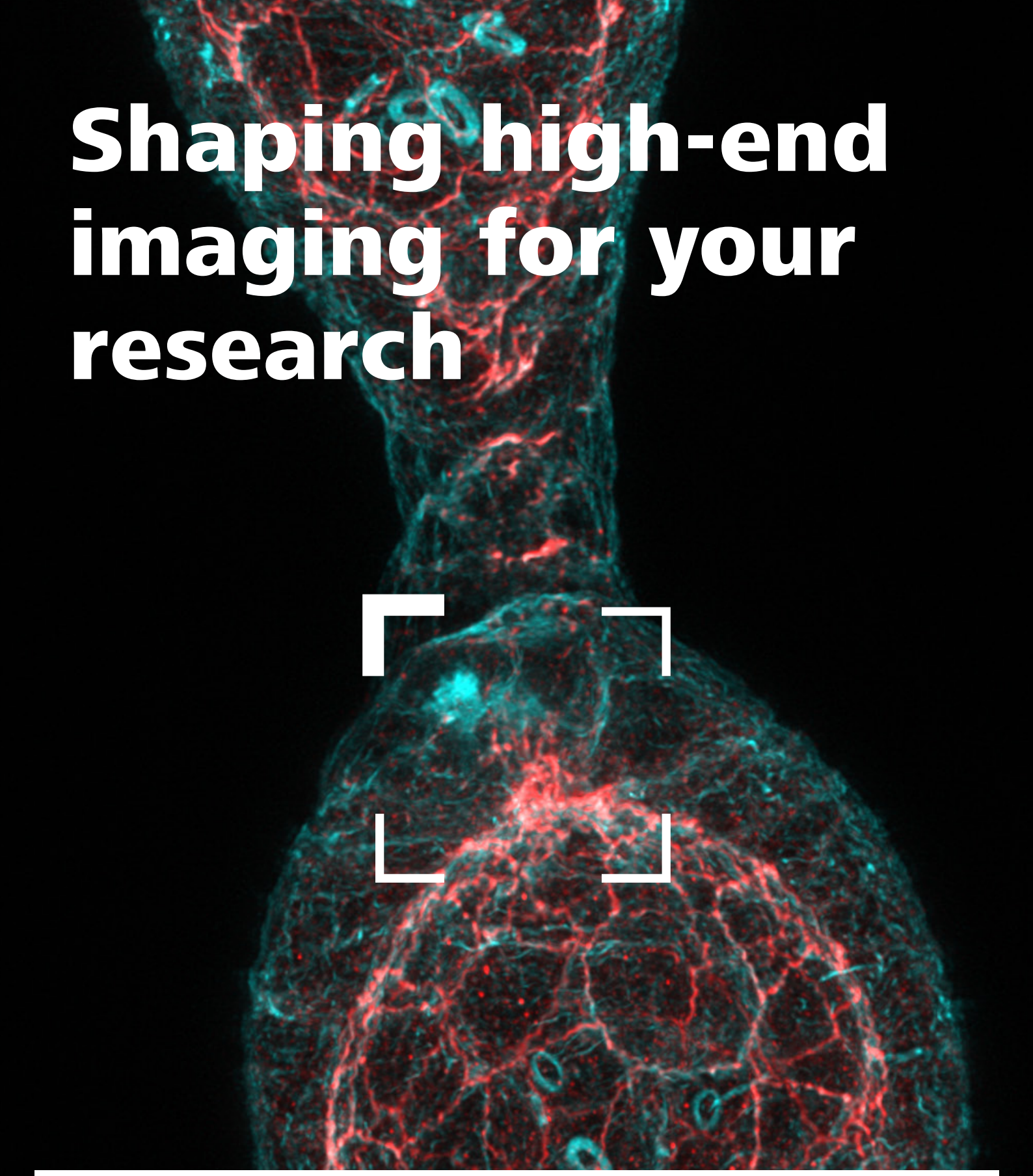


ZEISS LSM 980 with Airyscan 2

Your Unique Confocal Experience for Fast and Gentle Multiplex Imaging

zeiss.com/lsm980

ZEISS

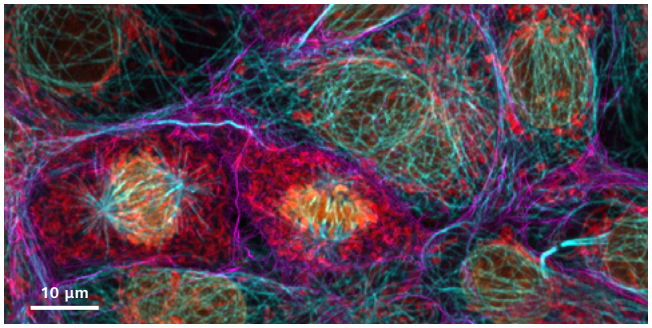
Seeing beyond

ZEISS LSM 980 with Airyscan 2

Your Unique Confocal Experience for Fast and Gentle Multiplex Imaging

To analyze life with as little disturbance as possible, you must use low labeling density for your biological models. This requires excellent imaging performance combined with low phototoxicity and high speed. LSM 980, your platform for confocal 4D imaging, is optimized for simultaneous spectral detection of multiple weak labels with the highest light efficiency.

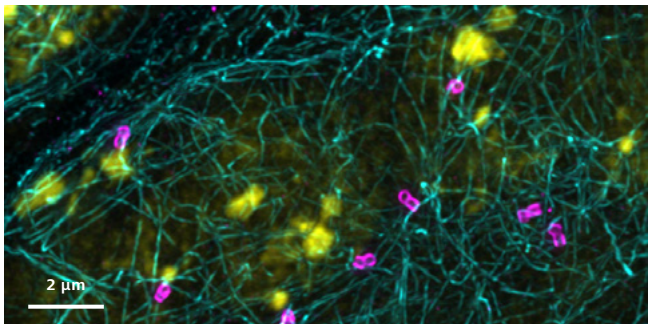
- Employ fluorescent labels from 380 nm to 900 nm.
- Get spectral imaging with up to 36 simultaneous channels.
- Improve any confocal experiment with LSM Plus.
- Push super-resolution and speed with Airyscan 2.
- Extend your research with NLO, NIR, Cryo, and SIM²



Sample courtesy of U. Ziegler and J. Doehner, University of Zurich, ZMB, Switzerland

A Unique Confocal Experience

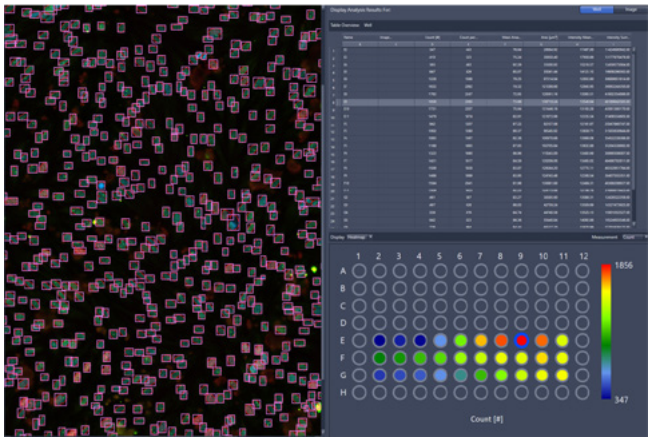
A light-efficient beam path with up to 36 simultaneous channels and full spectral flexibility up to the near infrared (NIR) range give you the perfect basis for multi-color experiments with living samples. On top of this, LSM Plus effortlessly improves all your experiments. The unique combination of spectral imaging with improved signal-to-noise ratio and resolution enables lower laser power for your live cell experiments.



Spermatogonia in Drosophila testis. Multi-color label with asterless (magenta), acetylated tubulin (cyan), and Hoechst 33258 (yellow). Imaged with ZEISS Airyscan 2 followed by Joint Deconvolution. Courtesy of S. Song, Prof. Liou Yih-Cherng's lab, Singapore

Image with More Sensitivity

Airyscan 2 allows you to do more than any conventional LSM detector. Each of its 32 detector elements collects additional information, while all of them together gather even more light, yielding super-resolution quantitative results. By adding structural information with Joint Deconvolution (jDCV), you can push resolution even further. Or use the Multiplex modes to get super-resolution information up to 10 times faster.



From beautiful images to valuable data: ZEN BioApps

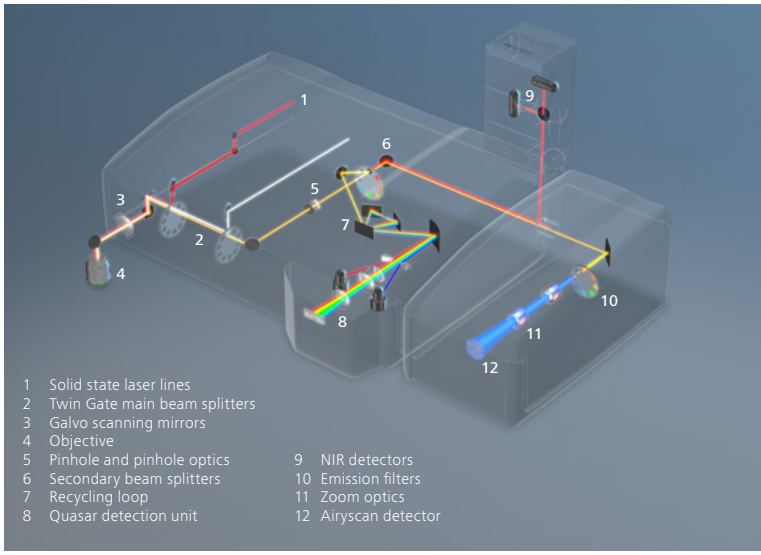
Increase Your Productivity

ZEN microscopy software puts a wealth of helpers at your command to achieve reproducible results in the shortest possible time. AI Sample Finder helps you quickly find regions of interest, leaving more time for experiments. Smart Setup supports you in applying best imaging settings for your fluorescent labels. Direct Processing enables parallel acquisition and data processing. ZEN Connect keeps you on top of everything, both during imaging and later when sharing the whole story of your experiment.

A Light-efficient Beam Path

Highest Sensitivity and Spectral Flexibility for Your Experiments

LSM 980 brings a great deal of freedom to your experimental setup. The LSM 980 beam path design ensures imaging with highest sensitivity, which is key to visualizing the lowest signal and resolving all structures, as well as spectral flexibility, allowing you to freely select fluorescent labels from 380 nm to the near infrared (NIR) range.



LSM Plus

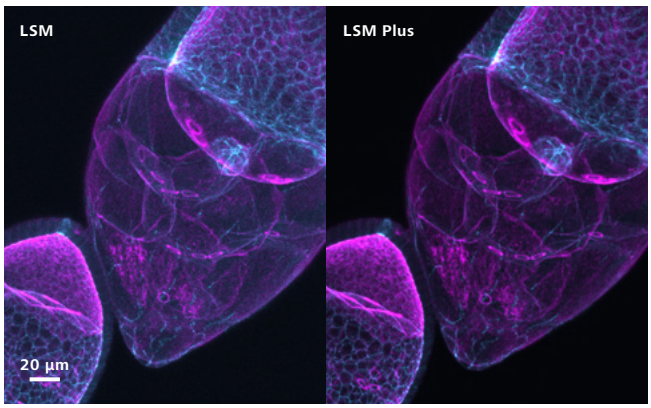
Improve literally any confocal experiment with next to no interaction, independent of detection mode or emission range. Apply LSM Plus to any confocal, multi-spectral, multi-photon, or near-infrared imaging mode and benefit from:

- Enhanced signal to noise at high acquisition speed and low laser power
- Improved resolution of spectral data with up to 36 channels in a single scan
- More spatial information and even greater resolution enhancement for bright samples

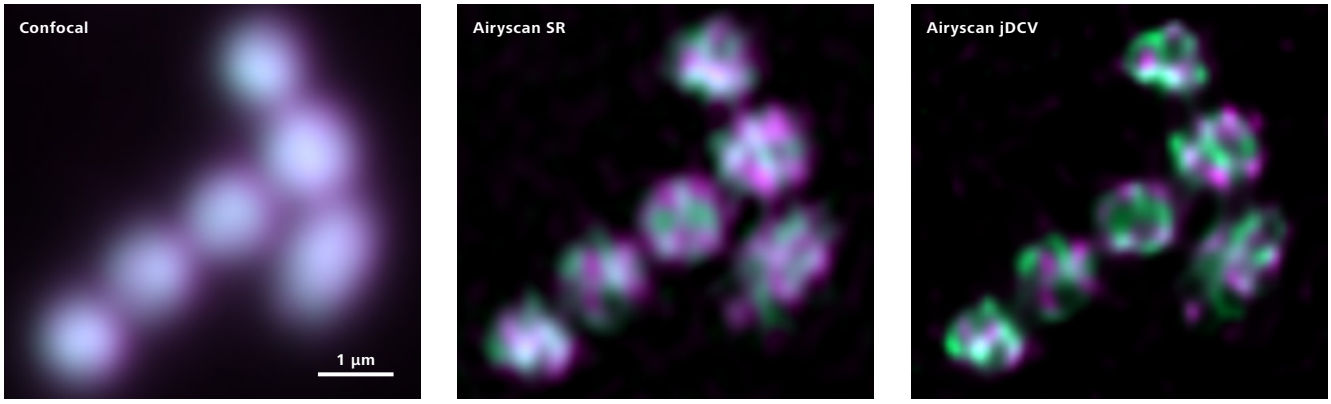
Airyscan Joint Deconvolution

Each of the 32 circularly arranged detection elements of the Airyscan detector has a slightly different view on the sample, providing additional spatial information that makes Joint Deconvolution possible. This reduces the distance that can be resolved between two points even further, allowing you to:

- Shift super-resolution imaging down to 90 nm
- Improve the separation of multiple labels
- Capture structural information with greater light efficiency



Drosophila egg chambers stained for F-actin (Phalloidin, magenta) and DE-Cadherin (cyan). Courtesy of T. Jacobs, AG Luschnig, WWU Münster; with T. Zobel, Münster Imaging Network, Germany



Comparing the confocal image (left) with Airyscan SR (middle) and Airyscan Joint Deconvolution (right). Mitochondria in an Arabidopsis thaliana *cell. mCherry (green) is targeted to the matrix and GFP (magenta) to the intermembrane space. Courtesy of J.-O. Niemeier, AG Schwarzländer, WWU Münster, Germany*

Your Flexible Choice of Components

1 Microscope

- Inverted stand: Axio Observer
- Upright stand: Axio Examiner, Axio Imager
- Port for coupling of Elyra 7 (Axio Observer)
- Camera port
- AI Sample Finder for Axio Observer
- Manual or motorized stages
- Incubation solutions
- Fast Z piezo inserts
- Definite Focus

2 Objectives

- C-Apochromat, C Plan-Apochromat
- Plan-Apochromat
- W Plan-Apochromat, Clr Plan-Apochromat,
- Clr Plan-Neofluar
- LD LCI Plan-Apochromat

3 Illumination

- V laser: 405 nm
- VIS + NIR laser: 445 nm, 488 nm, 514 nm, 543 nm, 561 nm, 594 nm, 639 nm, 730 nm
- Laser for multiphoton imaging: Ti:Sa (singe-line laser), InSight X3 / X3+ and Discovery NX (dual-line laser)

4 Detection

- 3, 6, or 34 descanned spectral channels (GaAsP and MA-PMT)
- NIR Detector (2 channels) with near infrared optimized GaAsP and GaAs detector
- 2 additional GaAsP channels (BiG.2)
- Up to 6 non-descanned GaAsP detectors
- Up to 12 non-descanned GaAsP and multialkali PMT detectors
- LSM Plus option for all detectors above
- Airyscan 2 detector, optional: jDCV, Multiplex module
- Transmitted light detector (T-PMT)

5 Software

- ZEN microscopy software, highlighted modules: LSM Plus, Airyscan Joint Deconvolution, Tiles & Positions, Experiment Designer, FRAP, FRET, FCS, RICS, ZEN Connect, Direct Processing, 3Dxl Viewer and 3D Image Analysis – powered by arivis®

Cover Image *Staining of F-actin (Phalloidin, cyan) and DE-Cadherin (red) in the Drosophila germarium. Imaged with ZEISS Airyscan 2 followed by Joint Deconvolution. Courtesy of T. Jacobs, AG Luschnig, WWU Münster; with T. Zobel, Münster Imaging Network, Germany*

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