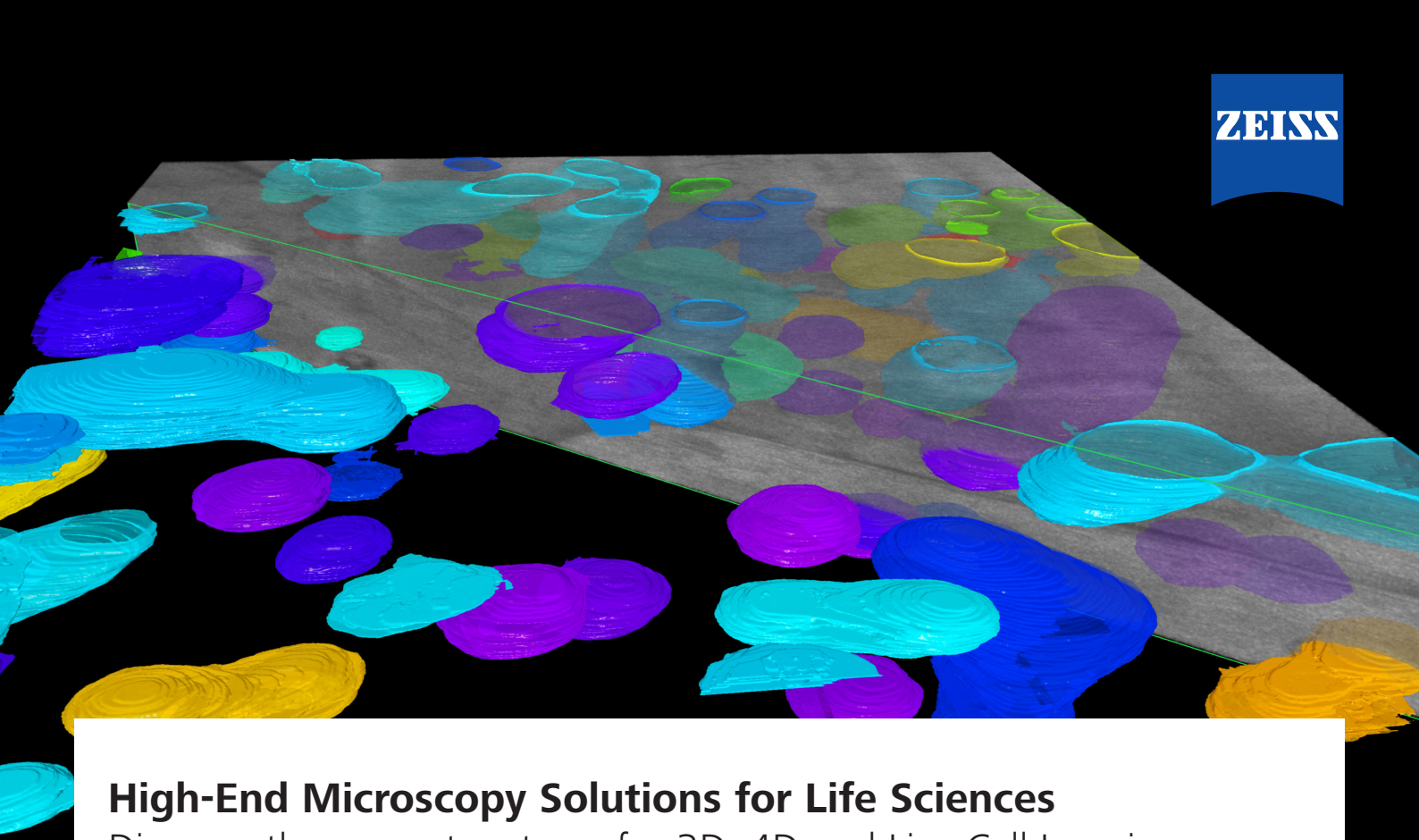

ZEISS

High-End Microscopy Solutions for Life Sciences

Discover the newest systems for 3D, 4D and Live Cell Imaging


Lattice Lightsheet 7

Discover the newest ZEISS Solutions

Your life sciences research often requires you to measure, quantify and understand the finest details and sub-cellular structures of your sample. You may be working with tissue, bacteria, organoids, neurons, living or fixed cells and many different labels.

The high-end imaging platforms by ZEISS combine everything you've ever asked for in your research environment: Superresolution, Fast & Gentle Imaging and Crisp Contrast.
Discover our solutions for easy sample transfer, fast coordinate recovery and powerful image correlation.

Our local sales team is happy to assist you!

ZEISS Bulgaria

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Or visit our Online Shop: www.micro-shop.zeiss.com

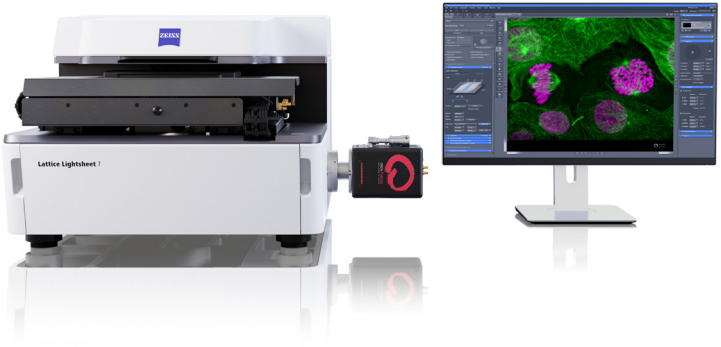
ZEISS Lattice Lightsheet 7

Live Cell Imaging has never been so easy

ZEISS Lattice Lightsheet 7 makes light sheet fluorescence microscopy available for live cell imaging at subcellular resolution – while also allowing you to use your standard sample carriers.

With this automated, easy-to-use system, volumetric imaging of subcellular structures and dynamics over hours and days with best protection from photo damage becomes available to everyone.

Discover the dynamics of life in unprecedented depth of detail – with the ease you never imagined possible!

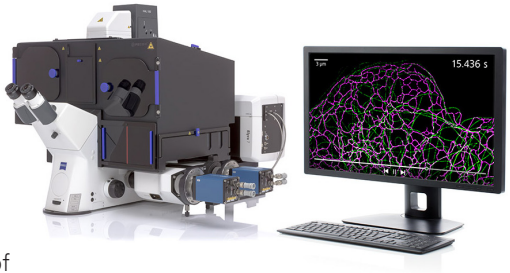


Highlights:

- **Amazingly Simple Access:** Examine living specimens directly on your standard sample carriers.
- **Next to no Photo Damage:** Watch the subcellular dynamics of life over hours and even days.
- **Near-isotropic Resolution:** Reveal three-dimensional details in their true proportions.
- **High-speed Volumetric Imaging:** Don’t miss an interesting event on your coverslip.
- **Auto-aligning System:** Focus your full attention on your experiments.
- **NEW: Truly Simultaneous Two-Color Imaging:** Raise your experiments to new heights.
- **NEW: Unattended Long-term Experiments:** An integrated incubation system provides long-term stability throughout varying environmental conditions.

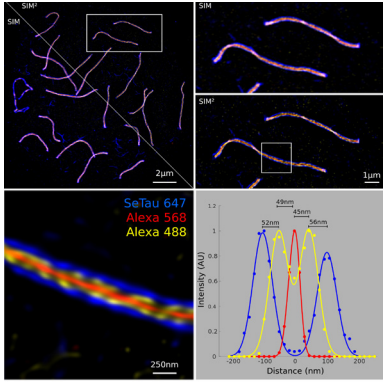
ZEISS Elyra 7 with Lattice SIM²

Your Live Imaging System with Unprecedented Resolution



The super-resolution microscope Elyra 7 takes you far beyond the diffraction limit of conventional microscopy: With Lattice SIM² you can now double the conventional SIM resolution and discriminate the finest sub-organelle structures, even those no more than 60 nm apart.

You don't need to sacrifice resolution when imaging at high speed using only the minimal exposure needed for life observation. Elyra 7 enables you to combine super-resolution and high-dynamic imaging – without the need for special sample preparation or expert knowledge of complex microscopy techniques.



Architecture of threefold labeled synaptonemal complexes from mouse testis visualized via immunolabeling of SYCP3 with SeTau647, SYCP1-C with Alexa 488 and SYCP1-N with Alexa 568 and Lattice SIM² mode. Sample courtesy: Marie-Christin Spindler, Biocenter of the University of Würzburg.

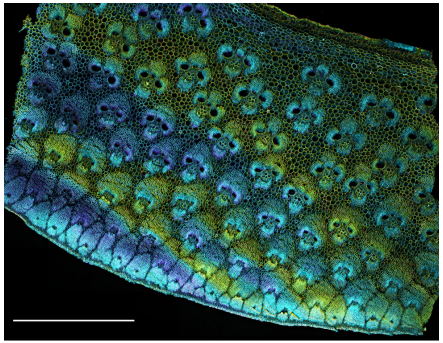
Lattice SIM:

In Lattice SIM, the sample area is illuminated with a lattice spot pattern instead of grid lines as in conventional SIM. This leads to a dramatic increase in imaging speed. In addition, the lattice pattern provides higher contrast to allow a more robust image reconstruction.

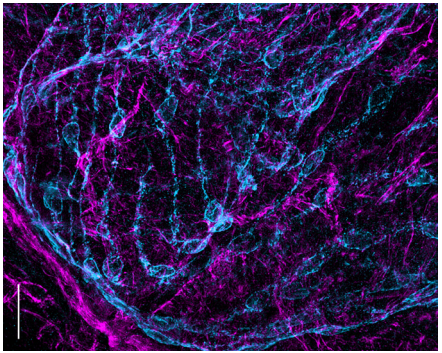
SIM² is the novel, groundbreaking image reconstruction algorithm that increases the resolution and sectioning quality of structured illumination microscopy data. SIM² is compatible with all SIM imaging modes of your Elyra 7 and fully integrated in the ZEN software.

Highlights:

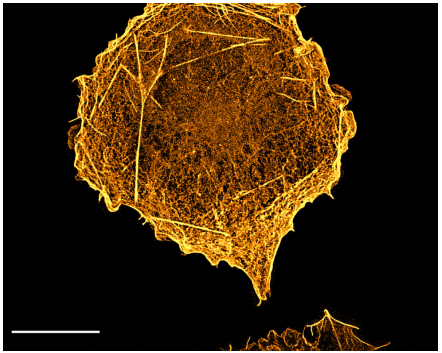
- Resolve structures down to 60 nm.
- Observe live cell dynamics at up to 255 fps.
- Accelerate image acquisition in all three dimensions.
- Get the sharpest sectioning in wide-field microscopy.
- Utilize a wealth of imaging techniques on one platform.
- Resolution Excellence with Lattice SIM².



SIM² Apotome: An entire 3D cross section (~13 mm²) of bamboo was imaged. Sample: "Bambus" from TS-Optics Set Dauerpräparate Botanik 25St.



SIM² Apotome and Lattice SIM² images of D. melanogaster larva. Images show maximum intensity projections of 3D data. Sample courtesy of R. Palmer and G. Wolfstetter (University of Gothenburg)



Actin dynamics in a Cos-7 cell expressing LifeAct-tdTomato were imaged with the SIM Apotome 3D Leap mode over time. The image shows a maximum intensity projection of 30 planes over 3.4 µm depth.

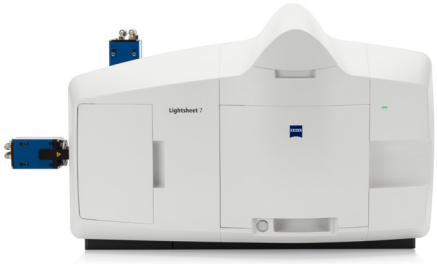
ZEISS Lightsheet 7

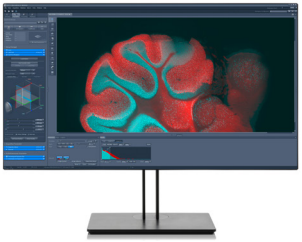
Multiview Imaging of Living and Cleared Specimens

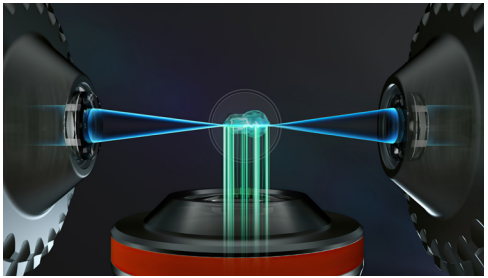
Light sheet fluorescence microscopy (LSFM) with its unique illumination principle is ideal for fast and gentle imaging of whole living model organisms, tissues and cells as they develop.

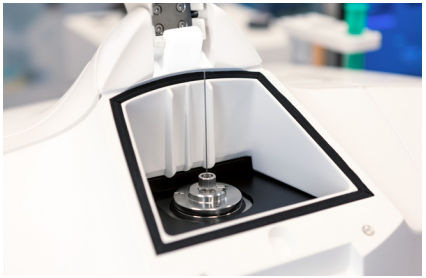
The exceptional stability of Lightsheet 7 lets you observe living samples over extended periods of time with less phototoxicity than ever before. What's more, use this light sheet microscope to image very large optically cleared specimens in toto, and with subcellular resolution.

Enhance your Lightsheet 7 with dedicated optics, sample chambers and sample holders to accurately adjust to the refractive index of your chosen clearing method, and then image your large samples, even whole mouse brains. All of this flexibility comes in this proven and stable boxed light sheet microscope from ZEISS.



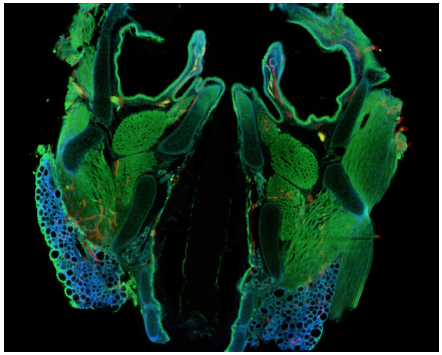




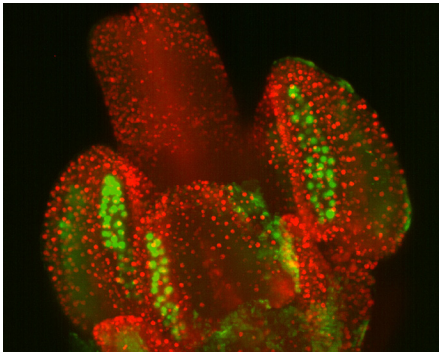


Highlights:

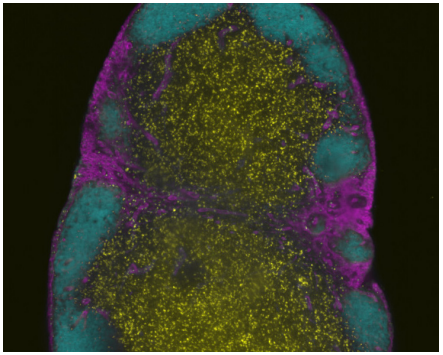
- Lightsheet 7 is designed to match all different conditions. You can now image specimens at up to 2 cm in size at any refractive index between 1.33 and 1.58, and in almost all clearing solution.
- Newly designed optics and sample chambers let you adjust to the perfect refractive index. The new sample holder makes mounting larger specimens simple.
- Smart software tools help you adjust imaging parameters, such as light sheet and sample positions, the right zoom settings, tiles and positions as well as data processing parameters.
- Lightsheet 7 now features the high quantum efficiency of pco. edge sCMOS detectors to enable observations of the fastest processes at the lowest illumination light levels.
- PLSFM combines the optical sectioning effect with parallel image acquisition from the complete focal plane. This makes 3D imaging extremely fast and very light efficient.



3D Data set of a P10 mouse trachea displaying the anatomical organization of mechanosensory nerve fibers. Courtesy of: Dr. P.-L. Ruffault, Prof. C. Birchmeier Laboratory of Developmental Biology



Development of Arabidopsis flowers: H2B:mRuby2: somatic nuclei, ASY1:eYFP: meiocytes. Courtesy of Riha lab, CEITEC, Masaryk Univ., Brno, CZ



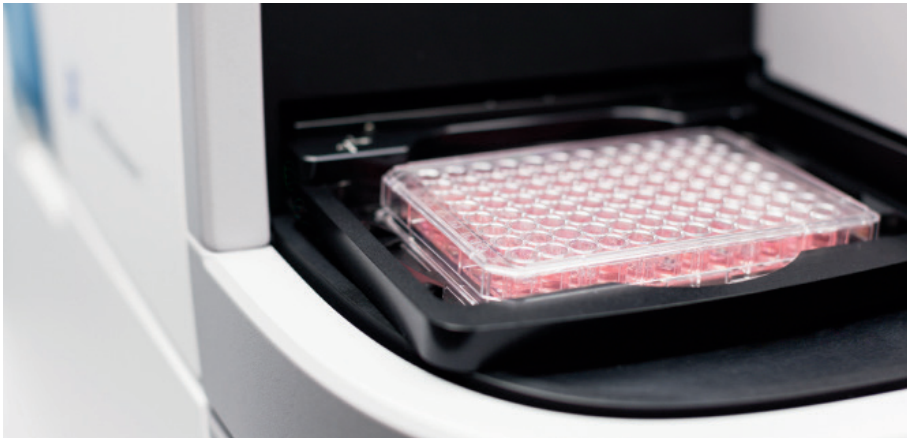
TInguinal mouse Lymph node imaged in Ce3D at RI=1.49. Courtesy of: Joanna Groom, The Walter and Eliza Hall Institute of Medical Research 1G Royal Parade Parkville VIC 3052 Australia

ZEISS Celldiscoverer 7 with LSM 900

Your Automated Live Cell Platform with Confocal

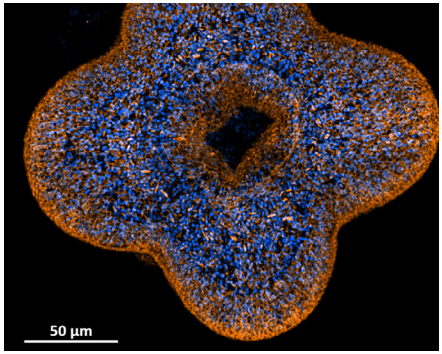
Celldiscoverer 7 calibrates itself, then detects and focuses on your samples while the optics adjust themselves. Whether working with 2D or 3D cell cultures, tissue sections or small model organisms, you will acquire better data in shorter times with this reliable automated research platform.

NEW: Add LSM 900 with Airyscan 2 to your Celldiscoverer 7. You perform live cell imaging with up to 1.5× resolution improvement. And you easily separate multiple labels with spectral imaging. It's never been easier to precisely connect widefield and confocal images. Fast mixed-mode acquisition simplifies and speeds up your workflow and gives you unique insights into your sample.

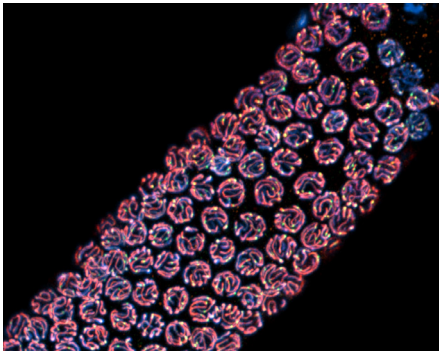


Highlights:

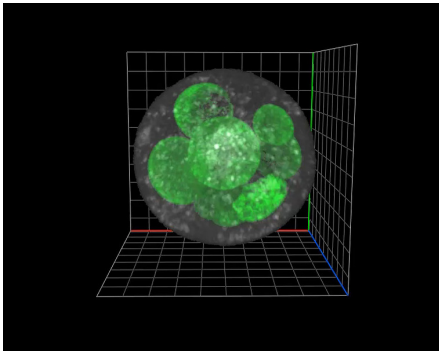
- Celldiscoverer 7 is a fully integrated high-end automated live cell imaging system. Tailor the system to your applications with various incubation and detection options.
- Go for fast, sensitive sCMOS or EMCCD cameras when performing demanding live cell experiments and rapid time-lapse recordings. For screening applications with high throughput, choose a high dynamic range camera with a large field of view.
- Add fast deconvolution to get better data from three-dimensional samples.
- A hardware-based focus finds and keeps the focus automatically after detecting the thickness and optical properties of the sample carrier for demanding long-term, time-lapse imaging.
- Autocorr objectives correct spherical aberrations to deliver crisp contrast and high resolution.
- NEW: Add LSM 900 with Airyscan 2 to get better data from three-dimensional samples.



Fixed starlet sea anemone (Nematostella vectensis). Maximum intensity projection. Sample courtesy of A. Stokkermans, Ikmi Group, EMBL, Heidelberg, Germany



Caenorhabditis elegans germline. Sample courtesy of S. Köhler, EMBL, Heidelberg, Germany



Organoid from a human breast cancer cell line. Sample courtesy of S. Gawrzak and M. Jechlinger, EMBL, Heidelberg, Germany

ZEISS LSM 900 with Airyscan 2

Your Compact Confocal for Fast and Gentle Multiplex Imaging

Discover the new LSM 9 family for confocal 4D imaging with high sensitivity and spectral flexibility. Add Airyscan 2 with its new Multiplex mode to profit from smart detection schemes and parallel pixel acquisition. Gently image dynamic processes in larger fields of view in superresolution and with acquisition times shorter than ever before. Or image your fixed samples with higher throughput and less bleaching.

Your LSM 900 is packed with innovative solutions for producing the best quality in confocal live cell imaging. The elegant beam path is designed for high spectral flexibility and sensitivity. With its small footprint and reduced complexity, you save valuable lab space and minimize time needed for user-training.

Highlights:

- You image with 4 – 8× more signal-to-noise ratio (SNR) and with superresolution.
- Combine the excellent image quality of your LSM 900 with the new Multiplex mode for Airyscan 2 to get more information in less time than ever before.
- The new Multiplex mode for Airyscan 2 adds smart detection schemes for parallel pixel acquisition. You can now observe dynamic processes in living specimens gently – without sacrificing image quality
- Your LSM 900 has a genuinely small footprint, concentrating on the essence of a confocal and leaving off needless complexity. It fits easily into your lab or imaging facility – and it's easy to use, too.
- LSM 900 with Airyscan 2 is very compact. The setup is simple with ZEN blue imaging software, even for complex confocal live cell imaging experiments.

LSM Plus

Improve spectral imaging

Apply LSM Plus with no extra effort and benefit from:

- Enhanced signal to noise at high acquisition speed and low laser power—particularly useful for live cell imaging with low expression levels
- 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 that allow to close the pinhole of the LSM
- Integrated workflows to combine the advantages of LSM Plus with Airyscan super-resolution imaging

Available as upgrade for:
LSM 800
LSM 900
LSM 980
CD7 with LSM 900

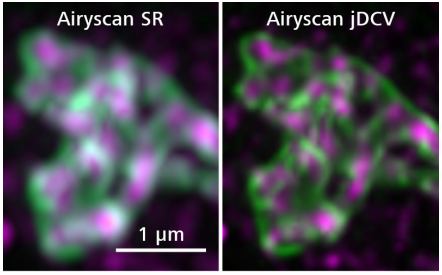
Airyscan Joint Deconvolution

Push resolution even further

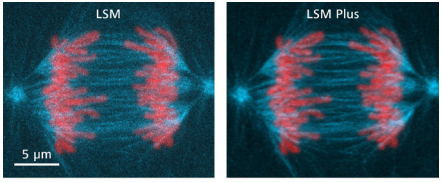
Airyscan 2 is an area detector with 32 circularly arranged detection elements. Each of these acts as a small pinhole, contributing to super-resolution information, while the complete detector area collects more light than the standard confocal setting. This produces much greater light efficiency while capturing enhanced structural information.

32 Views Mean More Information
Each of the 32 detector elements 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 - down to 90 nm.

Available as upgrade for:
LSM 800
LSM 880
LSM 900
LSM 980
CD7 with LSM 900



Comparing the Airyscan SR (left) and Airyscan Joint Deconvolution (right). HeLa cells expressing TOM20-pHluorin (green), anti-Cox8a (purple). Courtesy of K. Busch, S. Morris, Westfälische Wilhelms-Universität Münster; with T. Zobel, Münster Imaging Network, Germany



Live imaging of LLC-PK1 dividing cell (porcine kidney), expressing H2B-mCherry (red) and α-Tubulin-mEGFP (cyan). Maximum intensity projection of 37 z-planes. Comparing without (left) and with LSM Plus (right).

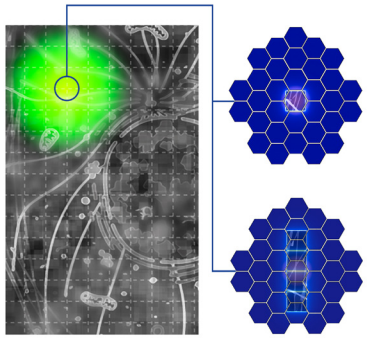
Upgrade your LSM!

ZEISS LSM 980 with Airyscan 2

The Most Flexible Confocal Research Platform

Your new LSM 980 with Airyscan 2 is the ideal platform for confocal 4D imaging. The entire beam path is optimized for simultaneous spectral detection of multiple weak labels with the highest light efficiency.

A number of software helpers will optimize your workflow and support efficient acquisition and data management. With ZEN Connect you can document and share all details of your experiments. You'll always keep the context as you combine overview images, ROIs and additional data, even across imaging modalities.



Multiplex Mode
Get more image data in less time

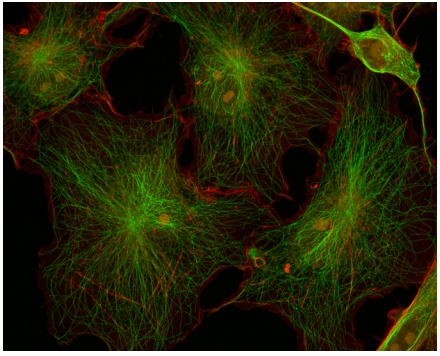
The new Multiplex mode uses knowledge about the shape of the excitation laser spot and the location of single area detector elements to extract more spatial information, even during parallel pixel readout. This allows to take bigger steps when sweeping the excitation laser over the field of view, improving achievable acquisition speeds.

Airyscan 2 in Multiplex mode can acquire up to eight superresolution image lines with high SNR.
Study the motility of vesicles and organelles, follow fast processes such as Calcium waves, muscle contractions, blood flow, cilia beating while keeping structural information, or image large fields of view at high volume rate to capture developmental processes.

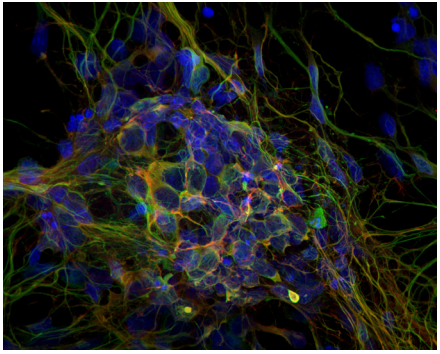
Highlights:

- Faster, better data: the new Multiplex mode for parallel pixel acquisition acquires up to 8 superresolution image lines with a high signal-to-noise ratio (SNR) in a single sweep.
- Increased productivity: ZEN blue imaging software with Smart Setup, Sample Navigator, and Direct Processing makes your work more efficient.
- More sensitivity: a light efficient beam path and Airyscan 2 offer a unique combination of gentle superresolution, high SNR, and spectral flexibility.
- Use Airyscan to get superresolution imaging with high sensitivity at 140 nm laterally and 400 nm axially. This transcends the deconvolution approach by preserving precious emission light normally rejected at a closed pinhole.
- Acquire multi-fluorescence images and analyze colocalization at the same time as you are performing spectral imaging of fluorescent proteins.
- Analyze molecule interaction and dynamics with FRET, FRAP, and FLIP, including photoactivation and photoconversion.

HeLa cells. Imaged with ZEISS Airyscan 2 in Multiplex mode for efficient superresolution. Courtesy of A. Politi, J. Jakobi and P. Lenart, MPI for Biophysical Chemistry, Göttingen, Germany



Comparing the field of view you can image at super-resolution in the same time using Airyscan SR (bottom) and Multiplex mode (top). COS 7 cells with labelled microtubules and actin



Maximum intensity projection of neurosphere, multi-color label with DAPI (blue), Tubulin-Cy2 (green), DCX-Cy5 (red). Sample courtesy of H. Braun, LSM Bioanalytik GmbH, Magdeburg, Germany

ZEISS EVO Family

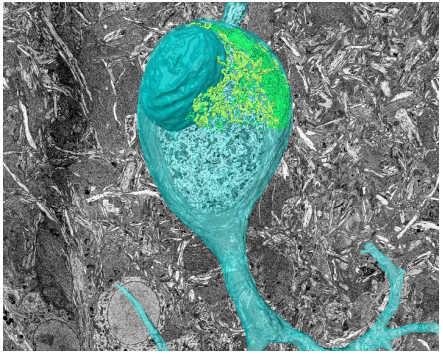
Your Modular SEM Platform for Intuitive Operation, Routine, and Research Applications

The ZEISS EVO family combines high performance SEM with an intuitive, user-friendly experience that appeals to both trained microscopists and novice users.

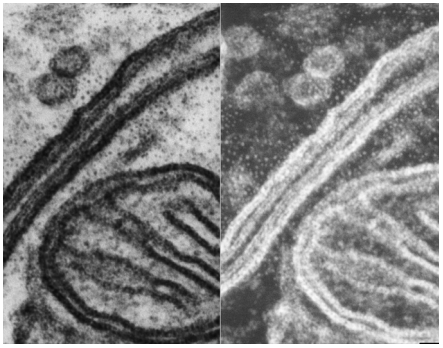
With its comprehensive range of available options (incl. wet-sample mode) it can be tailored precisely to your requirements.

Benefit from integrated EDS systems for live chemical analysis and STEM for fast imaging of subcellular structures.

Obtain highly detailed images of tissue samples without the need for active cooling by imaging samples in dynamic equilibrium in water vapor with the BSE detector and EVO.



Automatic acquisition of 3D brain ultrastructure using serial block-face imaging. Astrocyte (cyan) was identified and segmented.



STEM images of mouse brain, ultrathin section, double membrane of mitochondria, left: BF, right: DF

ZEISS Sigma Family

Your SIGMA FE-SEMs for Advanced Analytical Microscopy

ZEISS Sigma family delivers excellence performance at a very attractive price. Benefit from the proven Gemini electron column design and choose from a variety of dedicated detectors like aSTEM and SenseBSD. Now with improved VP performance due to NanoVP lite.

Save time with the semi-automated easy-to-use 4-step workflow on Sigma and EVO: streamline your imaging and analysis routines with one click solutions and increase productivity by SmartSEM touch and ZEN core SEM.

Achieve your sample analysis fast and convenient with the best-in-class EDS and Raman geometry.

Sigma now features improved resolution of 0.7nm @ 15kV and 1.2 nm at 1 kV.

ZEISS GeminiSEM Family

For Your Highest Demands in Sub-nanometer Imaging, Analytics and Sample Flexibility

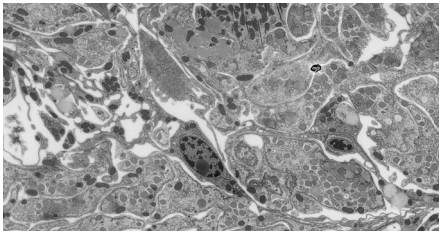
ZEISS GeminiSEM stands for effortless imaging with sub-nanometer resolution.

Innovations in electron optics and a new chamber design let you benefit from better image quality, usability, and flexibility. Combine excellence in imaging and analytics. Take sub-nanometer images below 1 kV without an immersion lens.

Discover three unique designs of the Gemini electron optics: Gemini 1, 2, and 3. Explore, how the GeminiSEM family answers all your imaging and analytical needs.

Use the new Sense BSD detector for TEM-like imaging at at speed you have newer seen before.

GeminiSEM 560 now features the Gemini 3 column in new electron-optics (EO) engine.



Ultrastructure of the bryozoan Tricellaria inopinata, a sessile marine species. field of view 30 µm.

Sense BSD detector for fast TEM like imaging is now available on all GeminiSEMs and Sigmas.

The technology behind it:

Field emission SEMs are designed for high resolution imaging.
Key to the performance of a field emission SEM is its electron optical column. Gemini is tailored for excellent resolution on any sample, especially at low accelerating voltages, for complete and efficient detection, and ease-of-use.

The Gemini objective lens design combines electrostatic and magnetic fields to maximize optical performance while reducing field influences at the sample to a minimum. This enables excellent imaging, even on challenging samples such as magnetic materials.

Inlens, the Gemini detection concept ensures efficient signal detection by detecting secondary (SE) and backscattered (BSE) electrons in parallel.

ZEISS Crossbeam for Cryo Tomography and TEM Lamella Preparation

NEW: Correlative Cryo Workflow

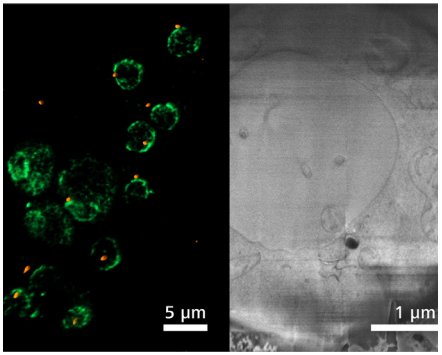
The cryogenic (cryo) equipment allows studies of hydrated samples under high vacuum conditions in the scanning electron microscope. Prior to their transfer into the electron microscope, the samples are shock frozen. During transfer and study in the microscope the sample is always kept at very low temperatures, typically around -140°C.

With the ZEISS Correlative Cryo Workflow, a combined hardware and software solution for cryogenic microscopy is provided. The workflow connects widefield, laser scanning, and FIB-SEM microscopes in a seamless and easy-to-use procedure. The hardware and software is optimized for the needs of correlative cryogenic workflows, from localization of fluorescent macromolecules to high-contrast volume imaging and on-grid lamella thinning for cryo electron tomography.

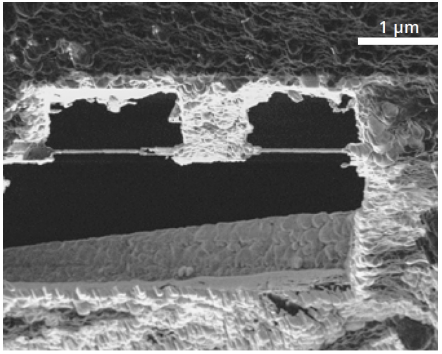
With the new Ion-sculptor Focused Ion Beam Column exclusively available for ZEISS Crossbeam systems you speed up your life-science nanotomography applications or cryo-TEM lamella preparation and benefit from maximum beam stability, low-kV performance and uniform beam profile.

In combination this leads to consistent slice thickness for true isotropic nano-tomography and defect free cryo TEM lamellas.

ZEISS LSM 980 and Crossbeam integrated with the Correlative Cryo Workflow.



Double-labelled yeast cells (CNM67-tdTomato and NUP-GFP). LSM image (left) and Crossbeam image (right). Sample courtesy M. Pilhofer, ETH Zürich, Switzerland



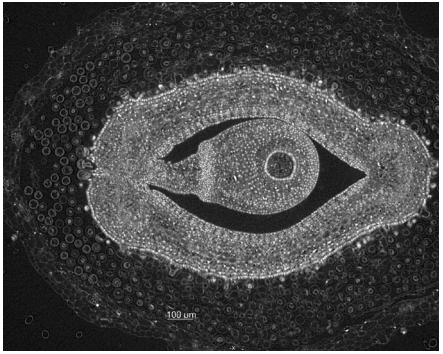
Yeast cells labeled with NUP (nuclear pore complex)-GFP and CNM67-tdTomato. FIB image of the prepared lamella; lamella thickness: 230 nmSample courtesy of M. Pilhofer, ETH Zürich, Switzerland

ZEISS Xradia Versa

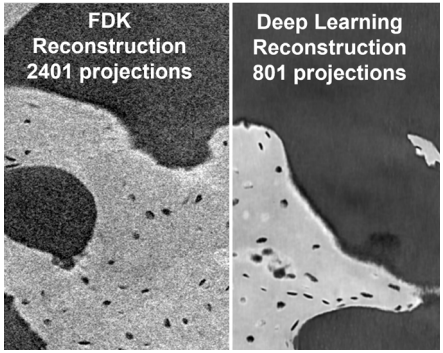
3D X-ray Microscopy for Faster Sub-Micron Imaging of Intact Samples

Unlock new degrees of versatility for your scientific research with the most advanced 3D X-ray microscope models – the ZEISS Xradia Versa family.

Building on market leading resolution and contrast provided by the unique RaaD™ (resolution at a distance) architecture with geometrical and optical magnification, ZEISS Xradia Versa systems expands the boundaries of your non-destructive multi scale imaging.



High resolution scan using the 4X objective lens at 1.2um voxel resolution of a single developing soybean seed.Courtesy of Dr. Keith Duncan, Donald Danforth Plant Science Center, USA



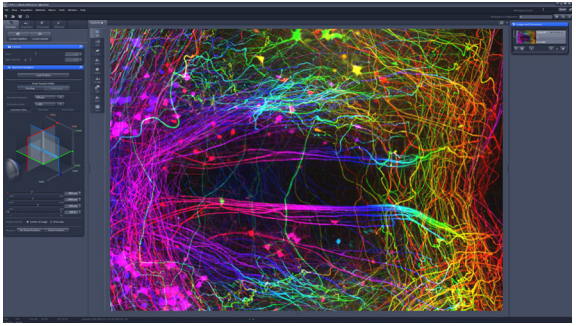
Dried mouse bone reconstructed using traditional FDK (left) and AI-powered DeepRecon Algorithm (right).

Highlights:

- Unmatched contrast and resolution.
- Absorbtion and Phase Contrast Mode available as standard.
- Non-destructive sub-micron scale microscopy of intact samples.
- Higher flux and faster scans without compromising resolution with up to 25 W.
- True spatial resolution of 500 nm with a minimum achievable voxel size of 40 nm over the entire engergy range with the new 40x Prime obejctive and the RaaD™ (resolution at a distance) detectors system.
- In situ imaging for non-destructive characterization of microstructures in controlled environments and over time.
- Upgradeable and extendible with future innovations and developments.
- AI-powered reconstruction algorithm for higher throughput and / or image quality.

ZEISS ZEN

Digital Imaging for Light Microscopy



ZEISS Efficient Navigation is the single user interface you will see on all light microscopy imaging systems from ZEISS.
ZEN microscope software leads you simply and quickly to the result. At all times you see which options the system is making available to you and which step is appropriate to take next.
You will time, reduce training and support costs, and get faster answers to your questions.

Focus on What You Need

ZEN controls all light microscope systems from ZEISS, letting you operate all of your devices with the same convenient interface. ZEN arranges operating elements in a way that follows your work flow. Functions you use only rarely are hidden away, out of sight - but always there with a single click.

A Secure Format for Important Data

The security of your data gets top priority as ZEN stores each of your experiments with all its metadata. Using the new data format .czi from ZEISS you easily process even the huge amount of data you acquire with our fast 3D imaging systems. Alternatively, store your images as OME-TIFF, the image format specification of the Open Microscopy Environment, to facilitate cross-plattform image data exchange even including your valuable metadata.

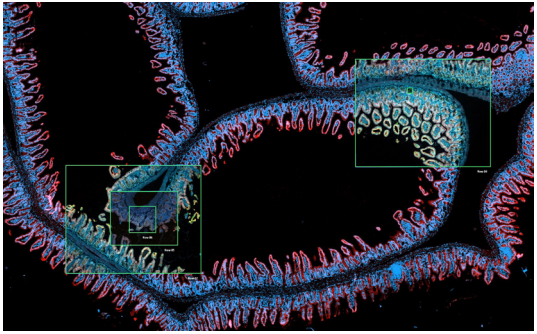
Select Fluorophore. Acquire. Done.

Smart Setup is the core of ZEISS ZEN microscope software – your intelligent control centre. Select the dye for your sample from the database with more than 500 dyes and ZEN automatically applies all necessary settings for your imaging system.

ZEISS ZEN Connect

Overlay and Organize Images from Any Source.

Connect All Your Multimodal Data to Expand Correlative Microscopy!
Often, to fully understand your sample, you will need to combine multiple microscopy technologies or contrasting techniques. ZEN Connect is the Software Solution when a single microscopy method is not enough to answer all your questions.



Overlay and Align All Your Images

Expanding classic correlative microscopy, ZEN Connect is open to all your images: you can load complex multidimensional images as easily as simple overview images from your mobile phone. It makes no difference whether your imaging technology is from ZEISS or from third parties. All image data can be aligned, overlayed and shown in context.

Smart Data Management

All the images you acquire with ZEN Connect are saved in well-structured database projects, complete with an intuitive label attached automatically to each image file. You can even search for microscope type and imaging parameters with the new filter function of ZEN Connect.

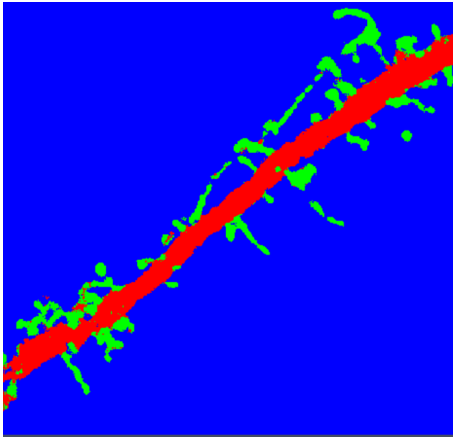
Acquire Overview Images for Easy Navigation

Image your sample with a ZEISS stereo microscope or any other low magnification system. Then move to your high-resolution system of choice. With ZEN Connect you only need to align it once, then use the overview image to navigate and find your ROIs. All subsequent high-resolution images will be shown in context as you zoom in and out across the borders of resolution domains and imaging technologies.

ZEISS ZEN Intellesis

Easily Segment Your Images

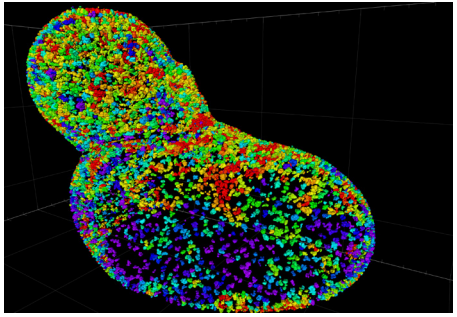
ZEN Intellesis uses established machine-learning techniques powered by Python, such as pixel classification and deep learning to easily create robust and reproducible segmentation results, even for non-experts. You can now train the software once and then ZEN Intellesis can segment a batch of hundreds of images automatically. You save time and minimize user bias.



arivis Vision4D

Your Powerful Scientific Imaging Software

arivis Vision4D provides a great user experience when handling very large image data even on regular consumer hardware. The easy to use and interactive user interface together with the fast and flexible rendering engine makes it easy to reveal interesting and fine structures, even in large or complex data sets. Viewing samples with synchronised clipping planes, projections and 4D rendering can help to understand structure and function much better and faster.



ZEN Data Storage

The safe haven for all your imaging data

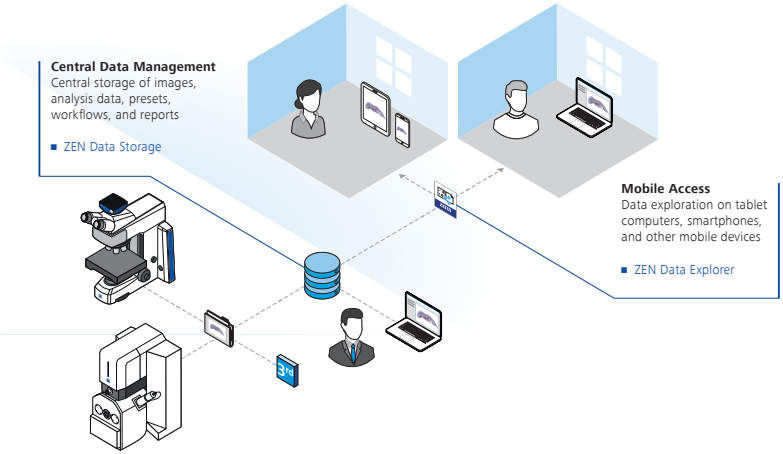
ZEISS implemented a central solution that manages your data storage. ZEN Data Storage Server forms the central database that holds not only the images, but also multidimensional ZEN Connect projects.

- Server software (provided by ZEISS) installed on any Windows-based server hardware
- (Windows Server, MS SQL)
- Concurrent access
- Role-based permissions
- Integration with ZEN blue
- Conserving complex data structures
- Separation of image acquisition and analysis

ZEN Data Explorer

Permanent access to your research results

ZEN Data Explorer makes your data available wherever you go. Running as a App as well as in a web browser, ZEN Data Explorer creates an access to your data storage and handles even large files efficiently.



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