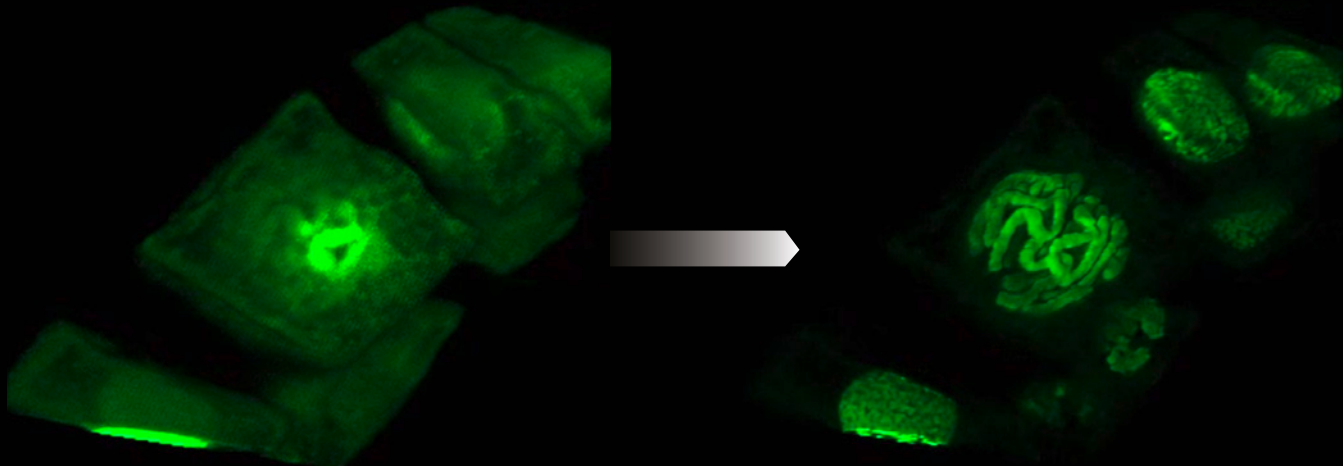


## REDEFINING THE DETECTION LIMIT OF CONFOCAL IMAGING

### Lightning Image Information Extraction



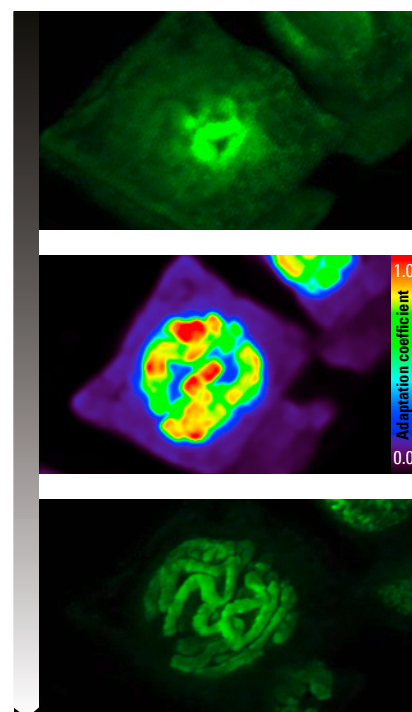
Chromosomes: The LIGHTNING detection system for image information extraction ensures the clear and unobstructed view of the relevant information

## One Click Ahead: The Maximum of Information from Each Specimen

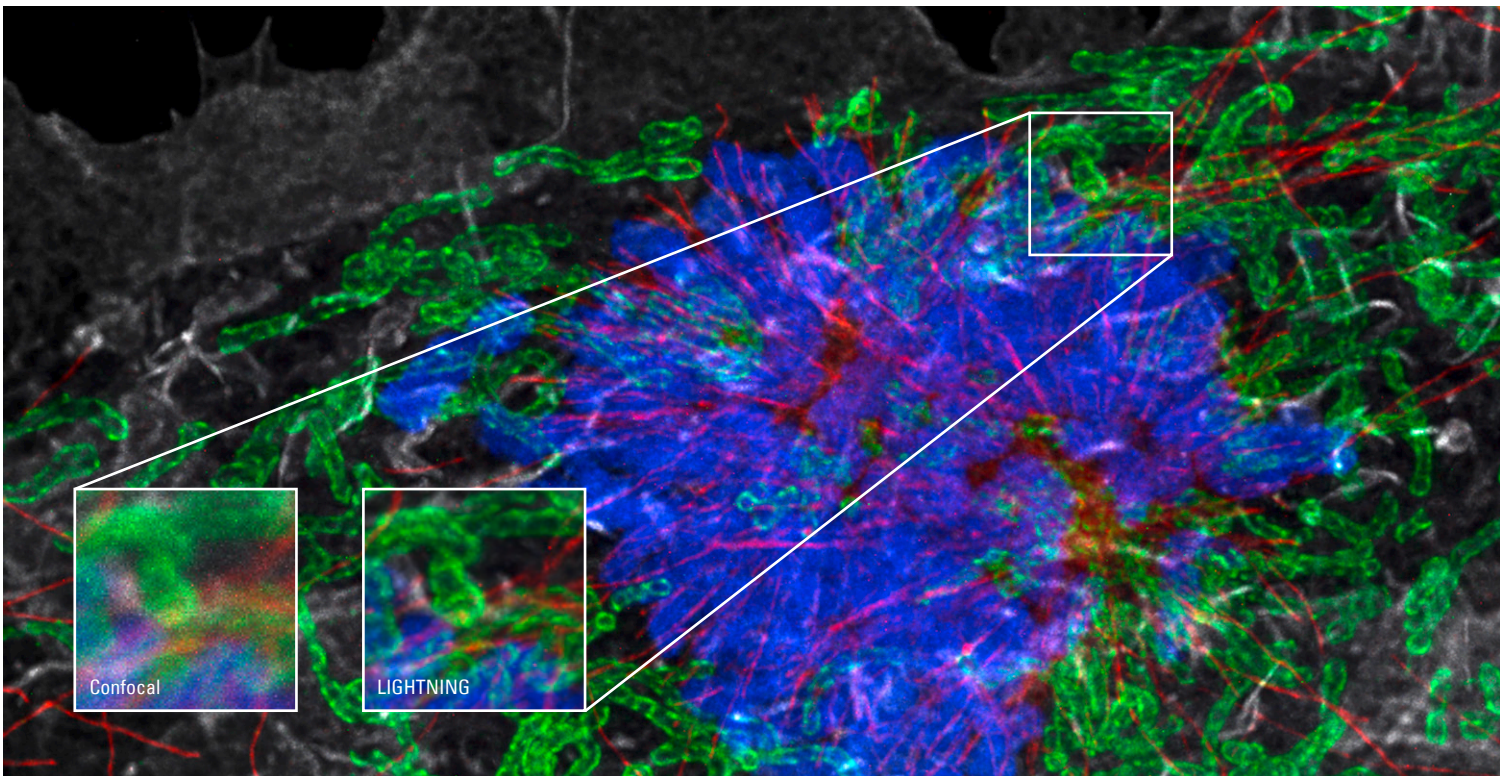
Maximize the information you extract from your specimen and get in-depth answers to scientific questions – with the LIGHTNING detection package for image information extraction.

LIGHTNING fully automatically detects the finest structures and details, which are otherwise simply not visible. The key for LIGHTNING is an adaptive process for extraction of hidden information in the image. Unlike traditional technologies, that use a global set of parameters for the full image, LIGHTNING calculates an appropriate set of parameters for each voxel to uncover every detail with the highest fidelity. In this process, the LIGHTNING decision mask ensures to adapt the best fitting reconstruction strategy for each specific volume element (see middle right image).

What is more, the LIGHTNING detection concept extends the TCS SP8 confocal microscope by simultaneous multicolor super-resolution imaging at the full original speed.



LIGHTNING works with a decision mask that takes individual volume segments into account which is remarkable superior to a global processing.



## Reproducible Results with Optimal Settings

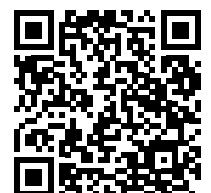
Confocal imaging with the adaptive intelligence technology of LIGHTNING optimizes the image for every probed location in the specimen. The final set of parameters is stored with each image so the imaging conditions are fully documented and, as a result, reproducible.

- > Set up all resolution-relevant parameters using one slider.
- > No post-processing needed due to full integration of LIGHTNING in the online image acquisition
- > Manage large data sets created by time-lapse recording, Mark&Find, Tile Scan or Navigator.
- > Visualize LIGHTNING 3D data with the LAS X 3D Viewer
- > Analyze LIGHTNING images with the LAS X Quantify tools.

## Multiple Colors and Super-Resolution Simultaneously

- > Acquire multicolor super-resolution images with high speed.
- > Collect up to five channels simultaneously with the filter-free spectral detection system TCS SP8.
- > Collect data much faster via simultaneous multichannel acquisition.
- > Acquire eight multicolor images in the same time single-detector solutions take to produce only one single-color image.
- > Record dynamic events in real-time and in all channels (40 fps @ 512 x 512 pixels).
- > Get access to nano-scaled structures down to 120 nm on the fly.

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