Leica
MICROSYSTEMS
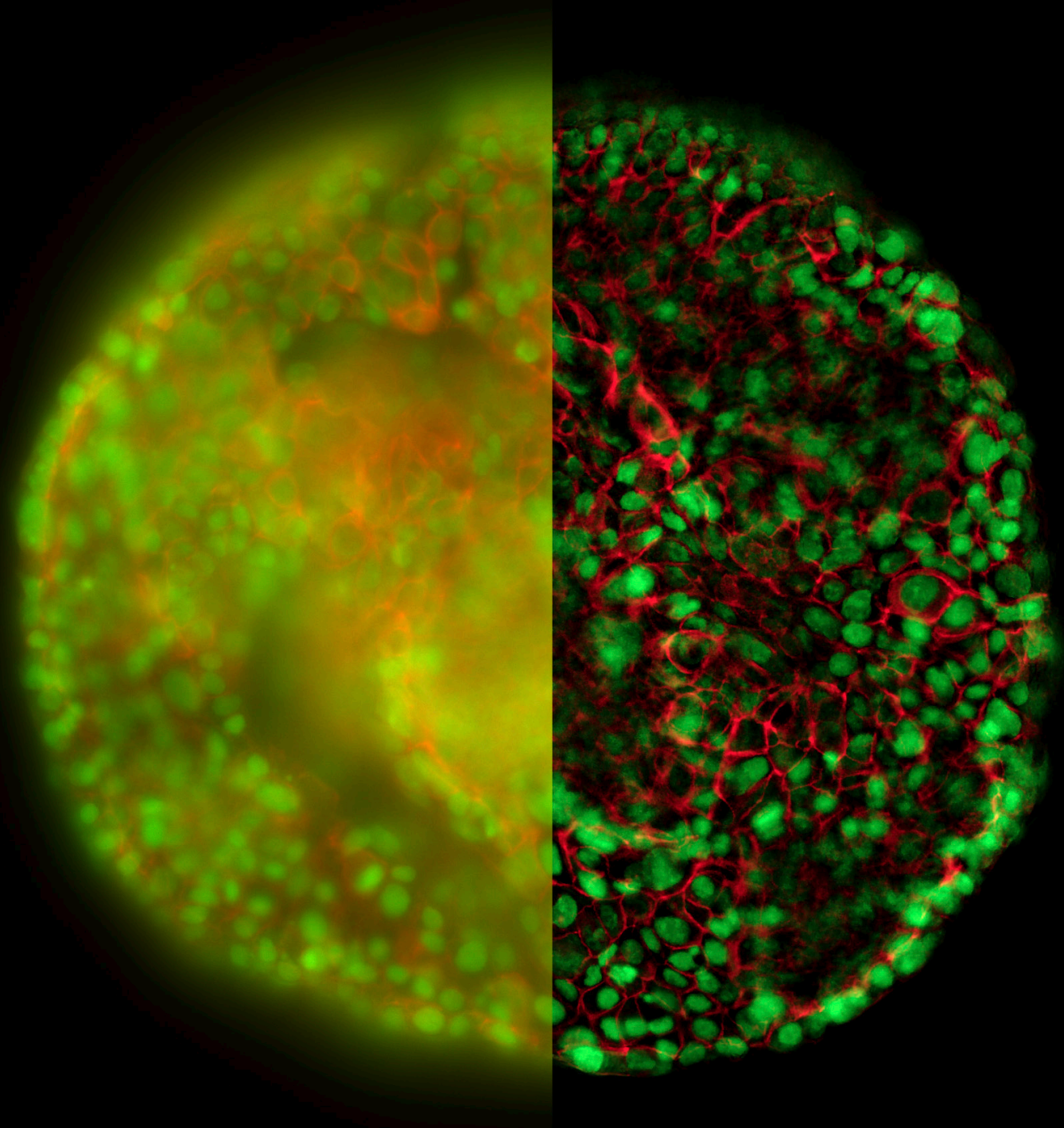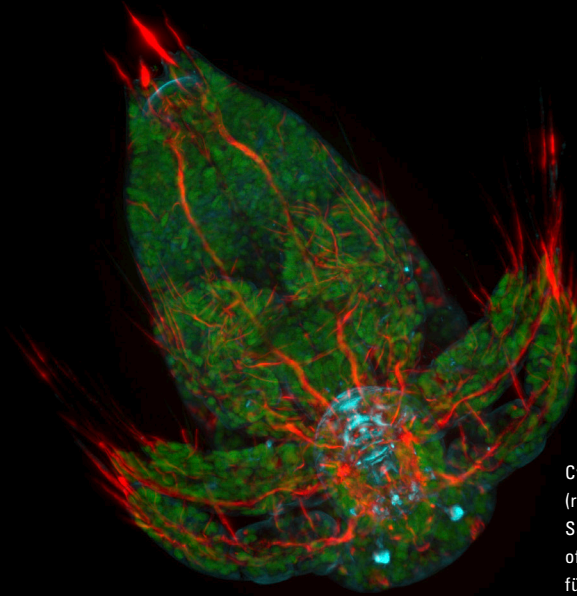
THUNDER Imaging Systems

Decode 3D Biology in Real Time*

* in accordance with ISO/IEC 2382:2015

Cyclops sp. Nuclei (green), acetylated Alphatubulin (red), Serotonin (cyan).
Sample courtesy Dipl. Biol. Thomas Frase, University of Rostock, Allgemeine & Spezielle Zoologie, Institut für Biowissenschaften, Rostock (Germany).

TAKE ADVANTAGE OF A
NEW CLASS OF IMAGING SYSTEMS

Once you see the results from a THUNDER Imager, you will want to move from any standard fluorescence, structured illumination, or spinning disc microscope for many of your 3D biology workflows.

THUNDER Imagers with Computational Clearing define a new class of instruments for high-speed, high-quality imaging of thick 3-dimensional specimens.

See through the haze

THUNDER Imager removes the out-of-focus blur through the new opto-digital method called Computational Clearing.

Now with the new THUNDER Imager, you can have both high-quality 3D images of thick samples and, at the same time, benefit from the speed and sensitivity of a widefield system. Whether single cells, tissues, whole organisms, or 3D cell cultures, THUNDER Imager enables you to decode 3D biology in real time.

MIN6 cells grown as pseudoislets (pancreatic beta cells). DAPI (blue), Insulin (Alexa488, green), membrane receptor (Alexa594, red), phalloidin (Alexa647, white).
Sample courtesy Dr. Rémy Bonnavion, MPI for Heart and Lung Research, Bad Nauheim (Germany).
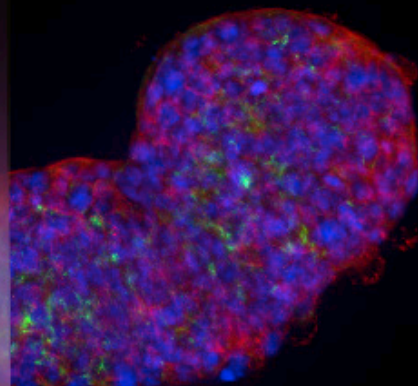
THE THUNDER FAMILY

Advance your live cell imaging to 3D

Combine next generation 3D cell culture models with an imaging system that offers great sensitivity, speed, and image quality to advance your live cell imaging to a whole new level of physiological relevance.

Investigate tissue in a 3D context

Whether you are investigating neurite projections, the architecture of a brain, or a regenerative response, THUNDER Imager provides you a 3D tissue imaging solution that is both powerful and easy to use.

**Work effortlessly with model organisms**

With THUNDER you can image relatively large model organisms, whether fixed or under physiological conditions (living), to gain insight and better understand their physiological and pathophysiological processes quickly.
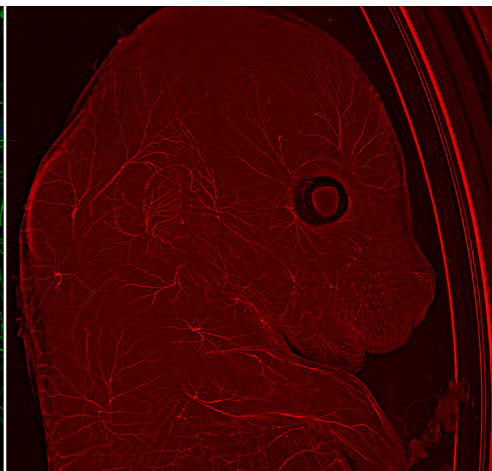
High performance for 3D biology

THUNDER imaging systems excel due to:

> Delivery of benchmark performance and first-rate results for your application

> Real-time removal of out-of-focus blur, thanks to Computational Clearing

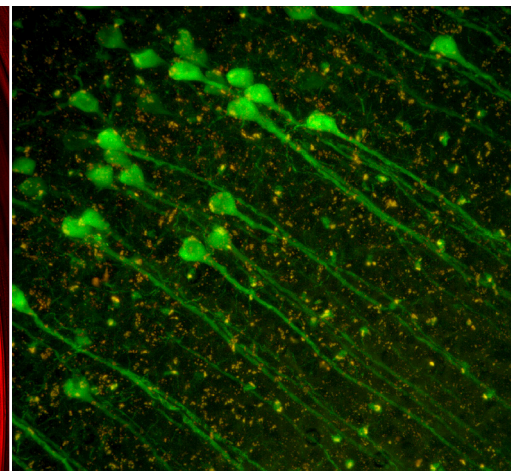> Ease-of-use, speed, and sensitivity, just like with widefield imaging

THUNDER Imager
3D Live Cell
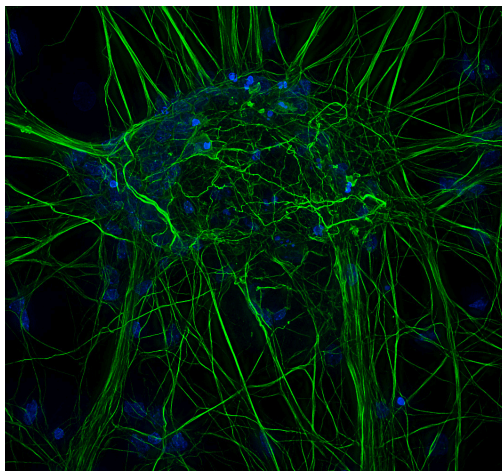
THUNDER Imager
Model Organism

THUNDER Imager
3D Tissue

THE THUNDER TECHNOLOGY

THUNDER is an opto-digital technology that uses the new Computational Clearing method to generate high resolution and high contrast images. It produces brilliant results for large image stacks, as well as single images taken deep in your sample.

THUNDER, a Leica technology, automatically takes all relevant optical parameters into account. It achieves haze-free results in real time.

Computational Clearing

Computational Clearing efficiently differentiates between signal and background by taking the size of the targeted specimen features into account. This approach makes image details immediately visible which formerly were not accessible. Acquire one image and you have stunning results displayed instantly on the screen.

Depending on the type of application, the base method can be combined with deconvolution using the Leica decision mask technique. It is fully automated and works independently without manual user input. The technique delivers high quality images at very fast speed.

Benefit from:

> Brilliant results in seconds

> Instant display of haze-free images during acquisition – no need to wait until the experiment is finished

> Achieve image quality with thick samples, formerly only possible with confocal systems

> Remove out-of-focus blur effectively, even from single-plane acquisitions

> No need to calibrate or adjust moving hardware components

CONNECT WITH US!
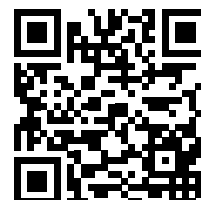
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