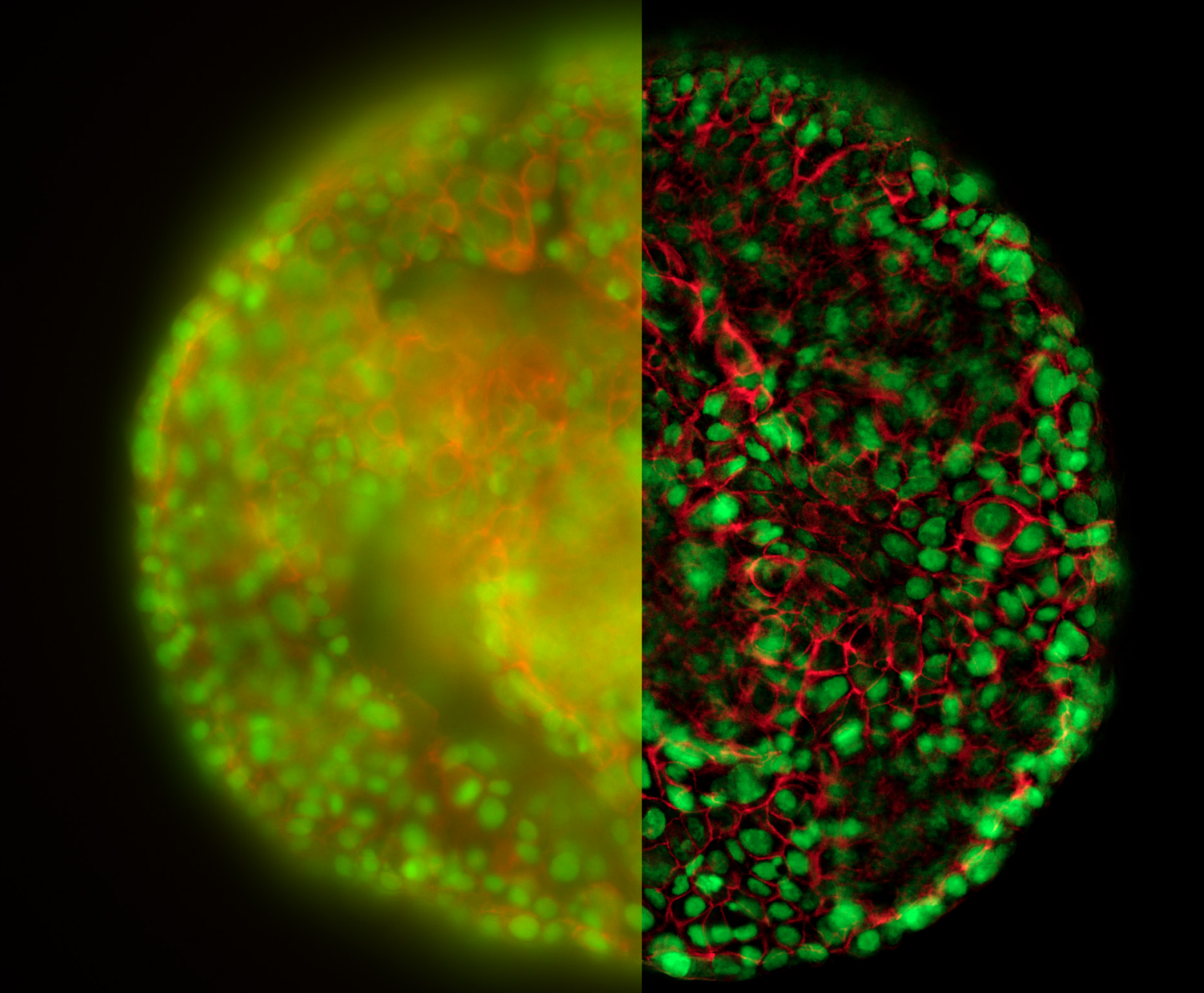
From Eye to Insight

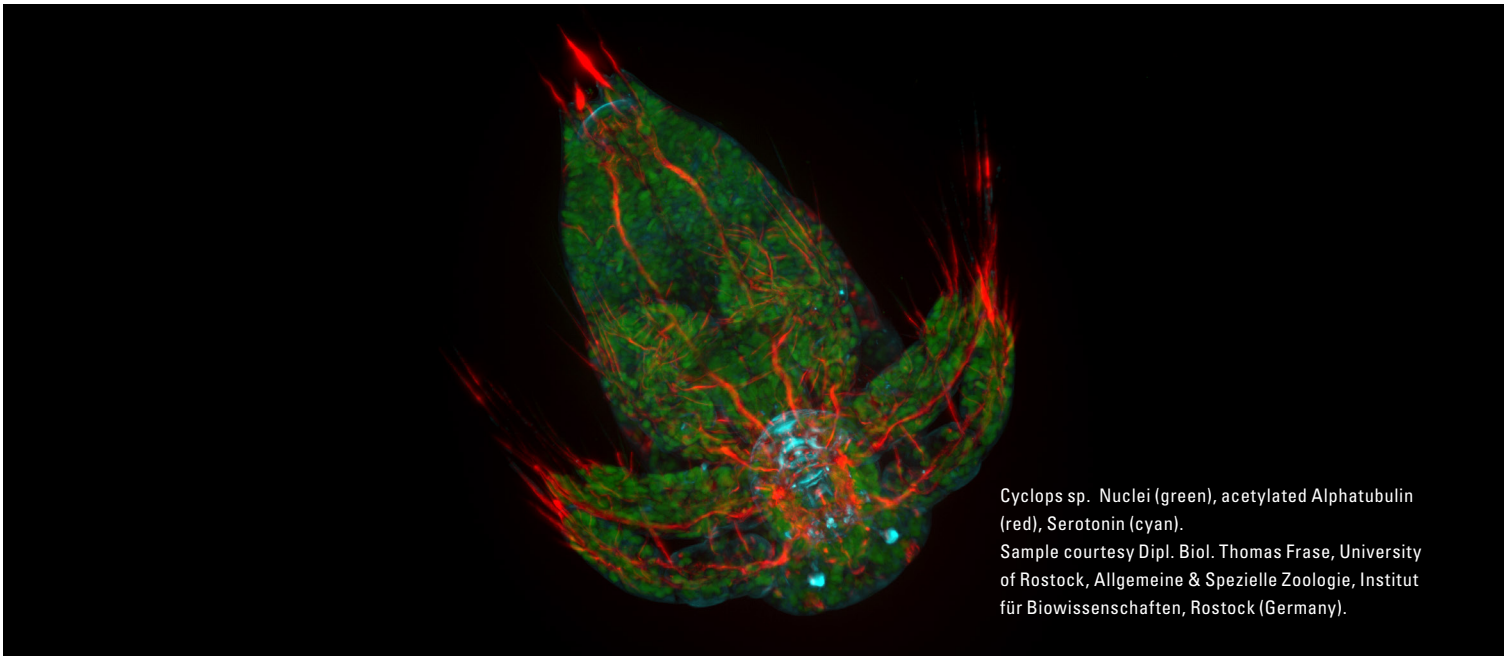
Leica
MICROSYSTEMS

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 retire any standard fluorescence, structured illumination, or spinning disc confocal 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.

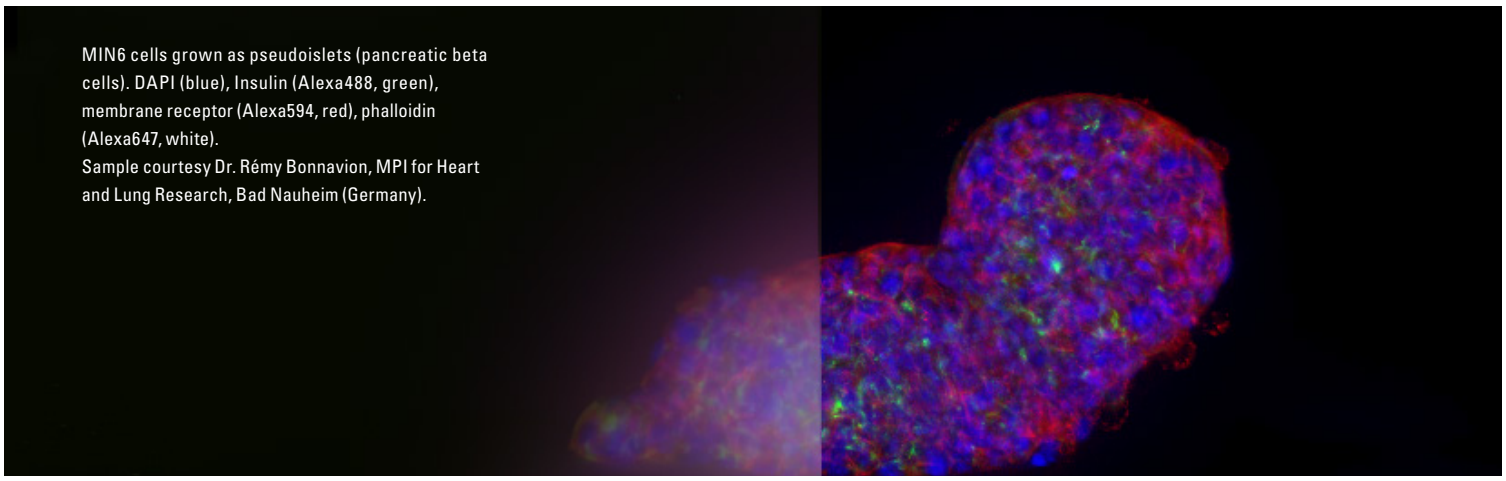
See through the haze

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.

"THUNDER would specially be useful for time-lapse, because it allows very fast scanning of big samples in less than 2 minutes, and provide exceptionally crisp images."

Dr. Almary Guerra, Max Planck Institute for Heart and Lung Research, Bad Nauheim (Germany)



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

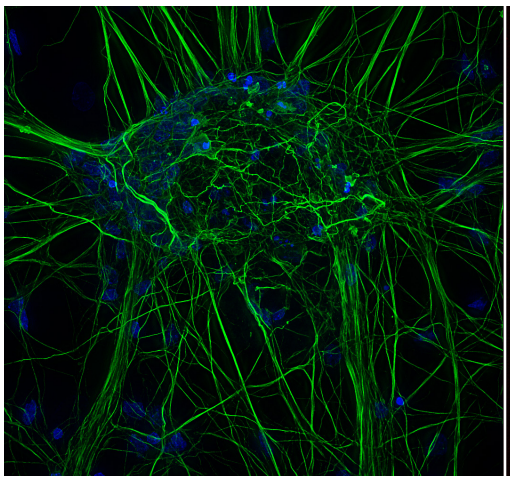
THUNDER imaging systems excel due to:

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

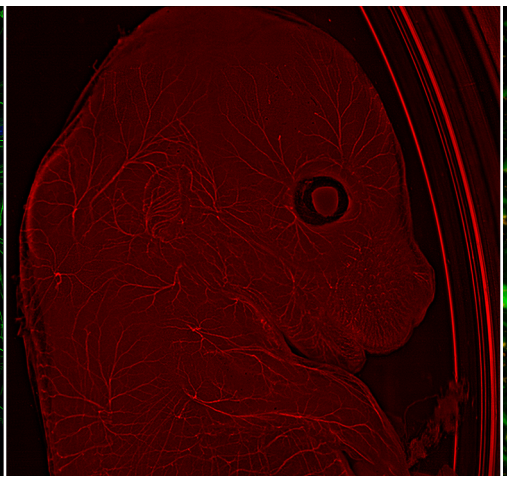
> Real-time removal of out-of-focus blur, thanks to Computational Clearing

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

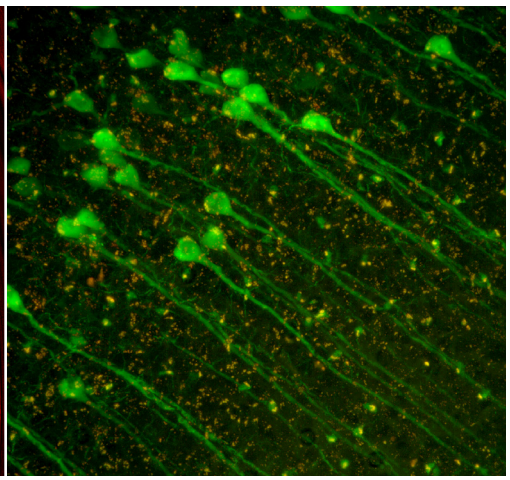
THUNDER Imager 3D Live Cell



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!

Leica Microsystems CMS GmbH | Ernst-Leitz-Strasse 17–37 | D-35578 Wetzlar (Germany)
Tel. +49 (0) 6441 29-0 | F +49 (0) 6441 29-2599

www.leica-microsystems.com/thunder

DEMO 장비 THUNDER Imager 3D Assay

렌즈구성

11506303	Obj. N PLAN 5x/0.12 PH0
11506522	Obj. HC PL FLUOTAR 10x/0.32 PH1
11506530	Obj. HC PL APO 20x/0.80 PH2
11506383	Obj. HC PL FLUOTAR 40x/0.80 PH2
11506349	Obj. HC PL APO 63x/1.40-0.60 OIL
11506375	HC FLUOTAR L 25x/0.95 W VISIR w. covergl

형광필터

11525304	Filter cube DAPI
11525314	Filter cube GFP
11525308	Filter cube RHOD
11525310	Filter cube TXR

카메라

Leica DFC7000T 칼라+모노카메라

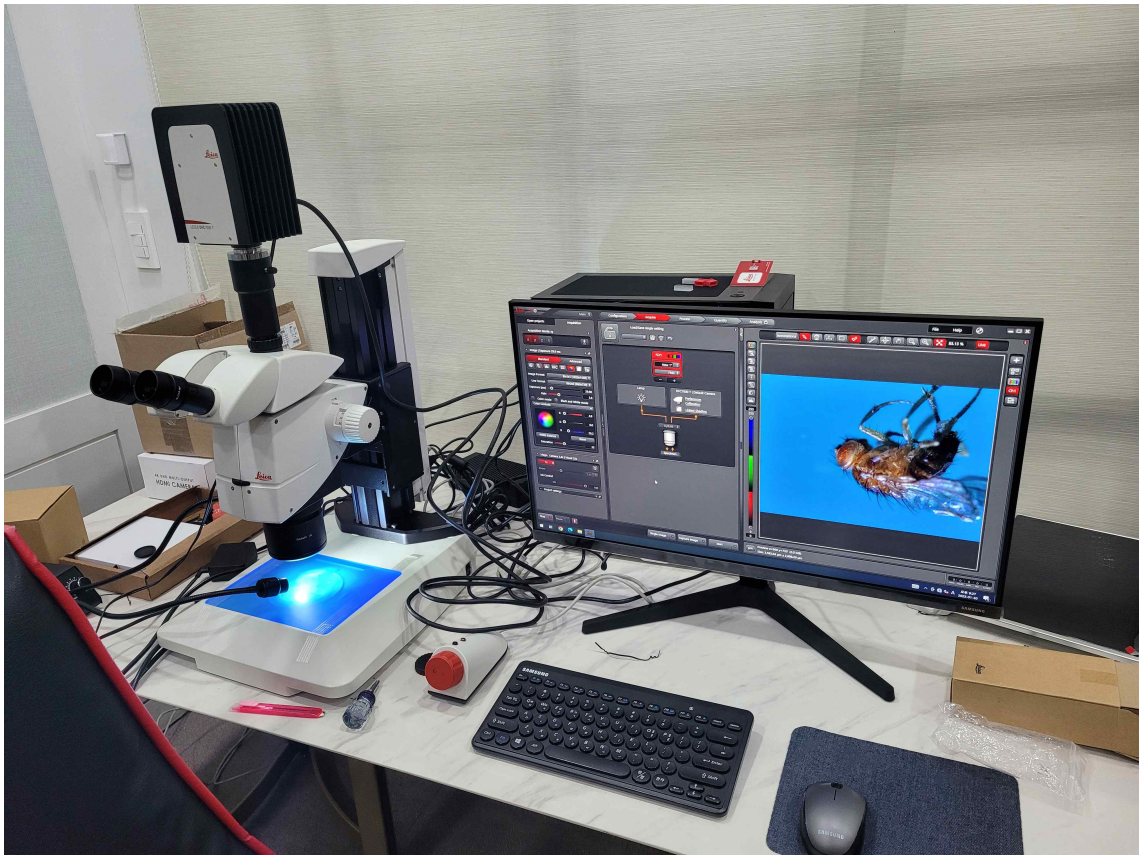
스테이지

Leica Scanning Stage X,Y,Z 축 자동

적용

광학,형광 슬라이드 스캔, Multi well plate 이미지 확인

샘플의 전체 이미지 확인과 고해상도 형광 이미지 확인



DEMO 장비 M205C , M205FCA 형광실체현미경

1X APO 렌즈 구성으로 기본배율 최대 160배까지 가능
투과식, 반사식 모두 가능
형광필터 GFP, RFP 준비