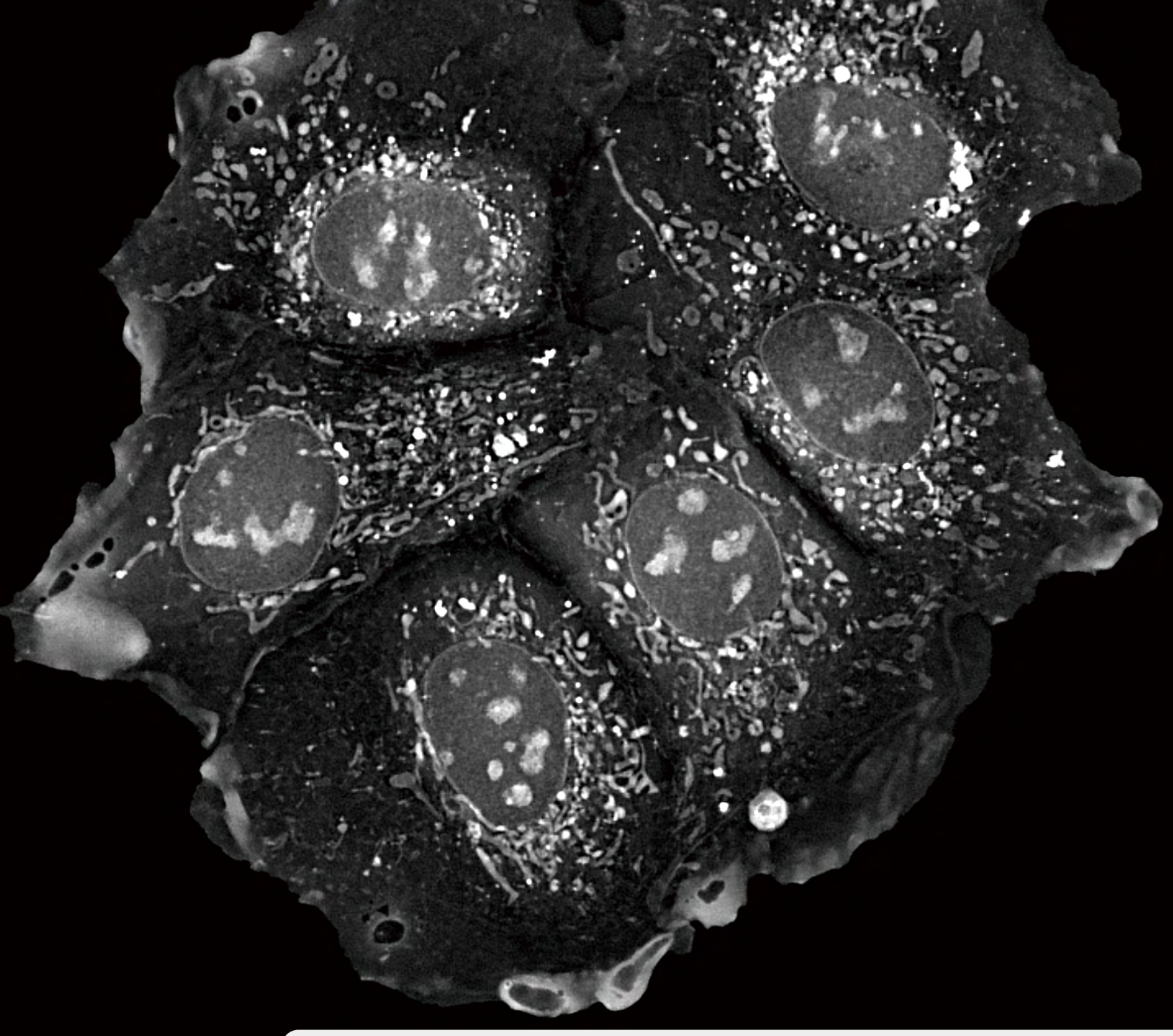
Tomocube

Holotomography Imaging System

HT-X1™ mini

Holotomography:
Now for Every Lab



Holotomography

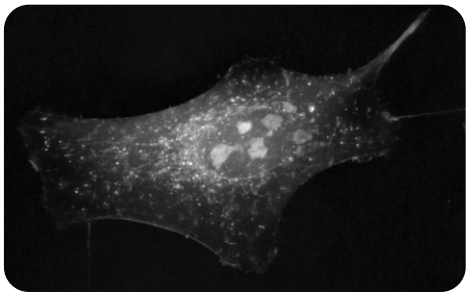
Tomocube's leading-edge holotomography (HT) technology represents a groundbreaking advancement in microscopy, opening new frontiers across a wide range of research fields.

With holotomography, researchers can explore live cells in their natural state, observing real time dynamics and intricate 3D structures without the need for labeling or staining. This innovative technology is not just enhancing our understanding—it's driving new discoveries and reshaping the possibilities in biological research.

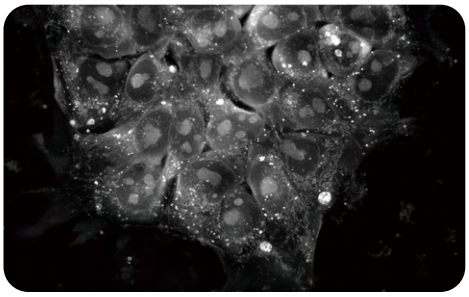
Compact Design. Uncompromised Quality.

The HT-X1™ mini brings the power of second-generation holotomography for label-free 3D live-cell imaging into a platform that fits any lab. With a compact footprint and uncompromised quality, it makes advanced 3D imaging **accessible to every researcher, everywhere**.

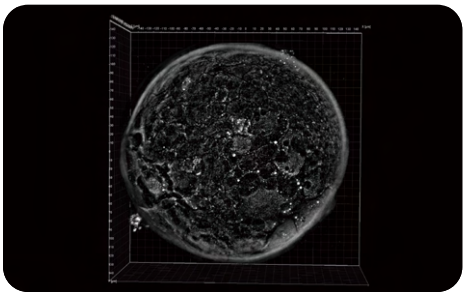
Non-invasive imaging across diverse samples: Boundless possibilities



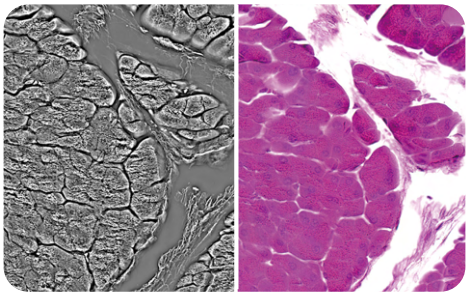
Cancer cell line
Lung adenocarcinoma (A549)



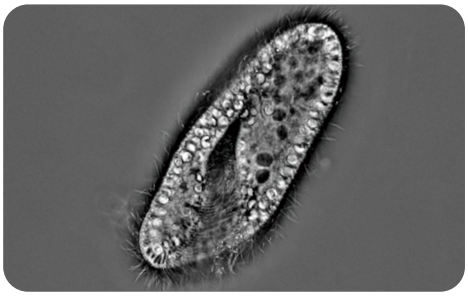
Stem cell colony
Human induced pluripotent stem cell (iPSC)



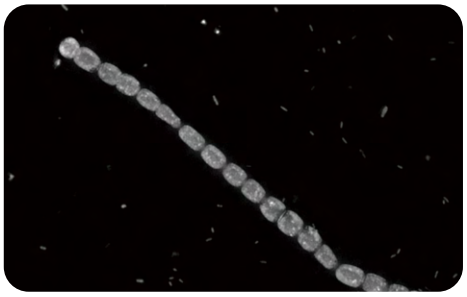
Organoid
Mouse hepatic organoid



Tissue
Mouse pancreatic tissue (HT, Brightfield)

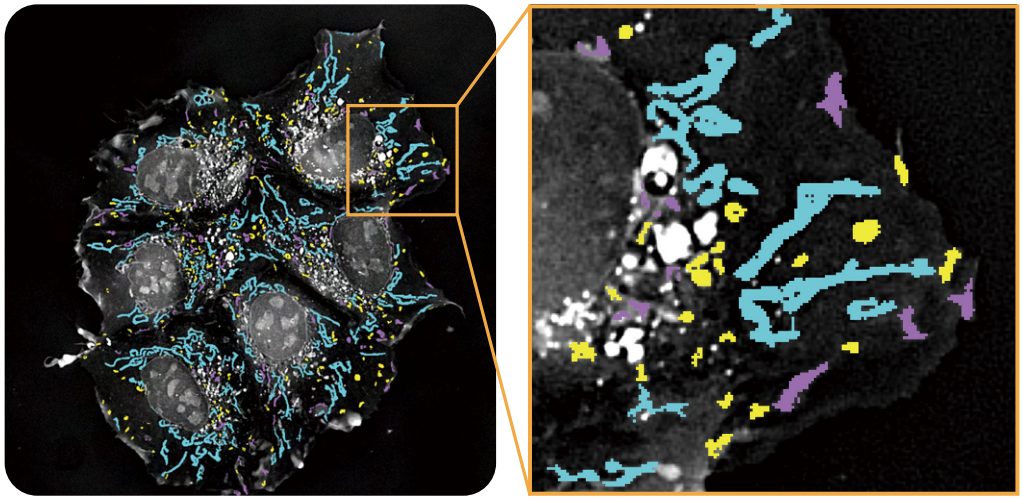


Protist
Paramecium



Bacteria
Cyanobacteria

TomoAnalysis compatibility: Unlock quantitative cellular insights



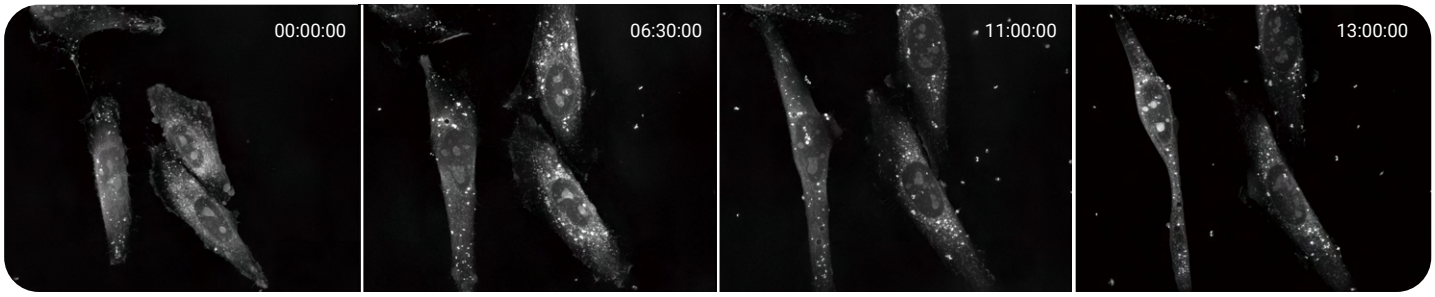
HT image of Hep3B cells analyzed with TomoAnalysis. Mitochondria are auto-segmented and color-coded by length: elongated (emerald), intermediate (purple), and fragmented (yellow).

Start Simple. Expand Freely.

The HT-X1™ mini starts as a robust core system, ready to expand through **modular upgrades** as your research advances. Correlative fluorescence, incubator, autofocus, and multi-wavelength options integrate seamlessly within a unified platform.

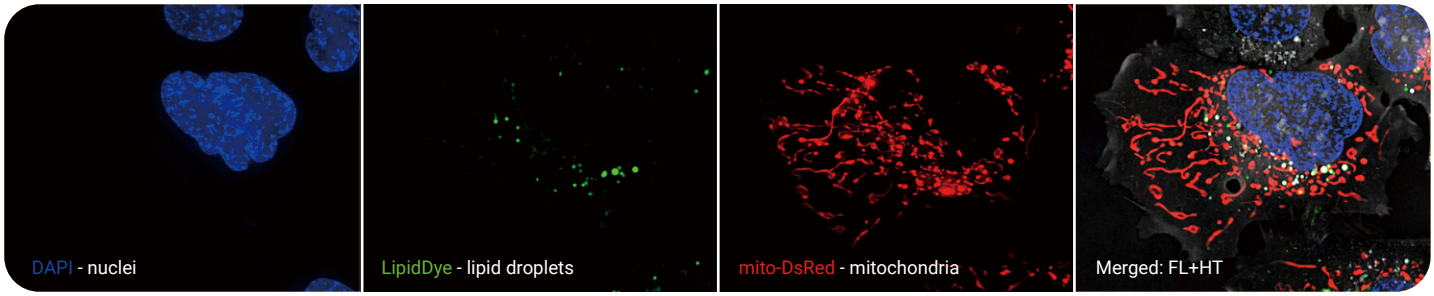
Stage-top incubation chamber

- Reliable environmental control enables long-term monitoring of morphological changes in siRNA-treated HeLa cells.



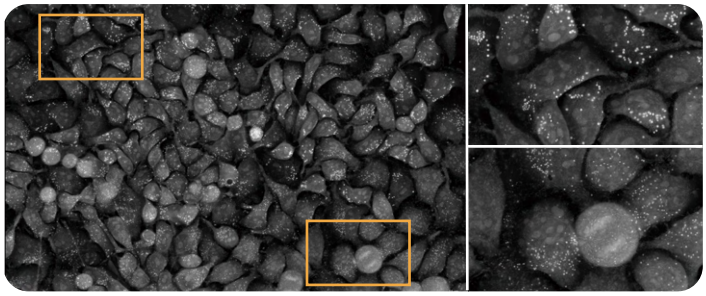
3-channel fluorescence light engine

- Label-free holotomography of Hep3B cells correlated with 3-channel fluorescence imaging.



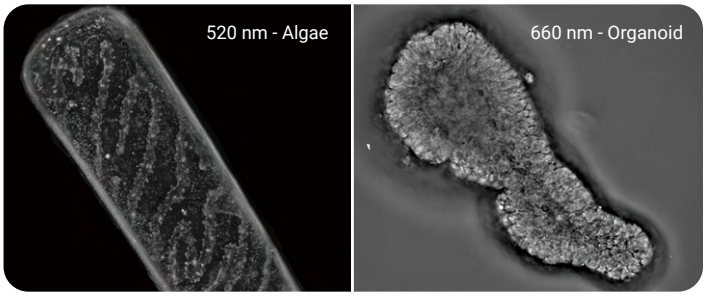
Laser-based consistent focus

- Stable tile scan of high-confluency cell sheet without focus drift.



Additional illumination wavelength

- HT images under different illumination wavelengths.



Compatible labware

- TomoDish 50 mm (1-dish)
- TomoDish 35 mm (1-dish/2-dish)
- Microscopic slide with #1.5 (170 µm) bottom thickness
- Chamber slide with #1.5 (170 µm) bottom thickness

Specifications

Holotomography System

Dimensions	430 (W) x 526 (D) x 492 (H) mm
Weight	Approx. 30 kg
Power supply	100-240 VAC, 50/60 Hz, 5-3A
Imaging area	85 x 60 mm
Objective lens	40x NA 0.75 air
Objective working distance	510 μm
Condenser lens	NA 0.72
Image sensor	2.8 Megapixels CMOS
Field-of-view	218 μm × 165 μm
Imaging modalities	Holotomography, Brightfield
Support labware	50 mm dish, 35 mm dish, microscopic slide, and chamber slide with #1.5 bottom thickness

Holotomography Optics

Light source	LED
Illumination wavelength	444 nm / 520, 660 nm (option)
Axial scan range	31, 62, 146 μm
Minimum resolution	170 nm x 170 nm x 840 nm
Minimum acquisition speed	1.3 sec per image
Autofocus (option)	Laser assisted active sensor

Fluorescence Light Engine (option)

Light source	LEDs
Excitation filters	378/52, 474/27, 554/23 (nm)
Emission filters	432/36, 515/30, 595/31 (nm)
Fluorescence light source trigger	3 channels

Workstation

Operating system	Windows 10 IoT Enterprise LTSC 2021 or equivalent
CPU	Intel Core i7 or equivalent
GPU	NVIDIA GeForce RTX 4090 or equivalent
RAM	128 GB

Environmental Controller (option)

Dimensions	110 (W) x 208 (D) x 206 (H) mm
Weight	3.8 kg
Power supply	100-240 VAC, 50/60 Hz
Temperature control	30 - 40℃
CO_2 range	5 - 20%
Humidity control	Heating bath humidifier

Headquarters

2nd Floor, 141, Jukdong-ro, Yuseong-gu, Daejeon, 34127, Republic of Korea
Tel. +82-42-863-1100 | info@tomocube.com | www.tomocube.com

Tomocube USA, Inc.

8880 Rio San Diego Dr, Suite #800, San Diego, CA, 92108, United States

Tomocube Europe GmbH

Robert-Bosch-Straße 31, Langen, 63225, Germany

www.tomocube.com