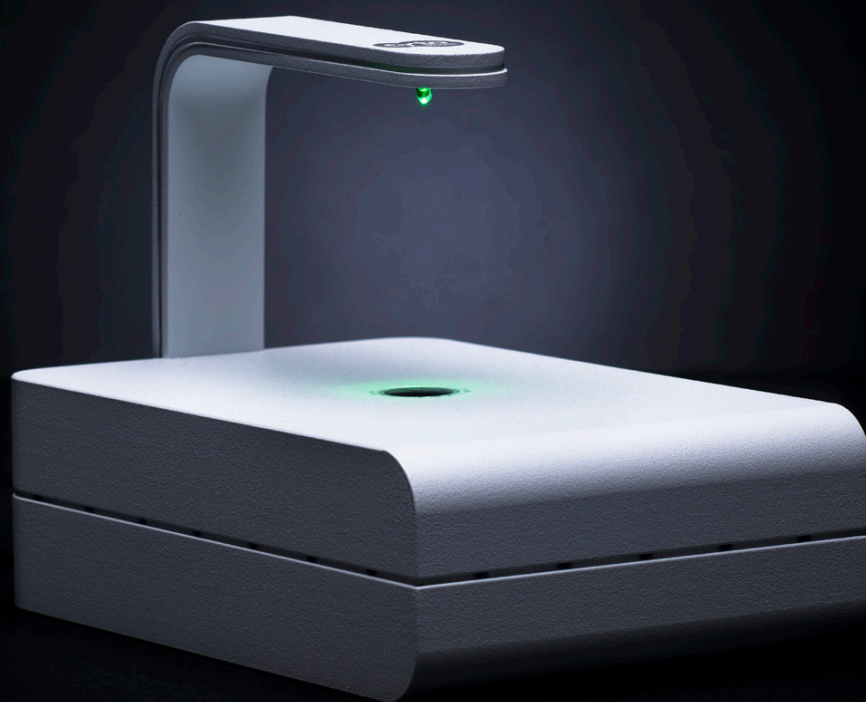


Distributed by



CytoSMART

Live Cell Imaging
Systems





About CytoSMART

CytoSMART™ Technologies is a Dutch company based in the tech-hub of Europe, Eindhoven. The company was founded in 2012 by a team of biologists and engineers who were convinced that a new generation of miniaturized microscopes, powered by artificial intelligence for image analysis, would allow scientists to make discoveries more efficiently and at a larger scale. CytoSMART™ believes that high-end innovative tools should be accessible by all those trying to be at the forefront of scientific discovery.

In 2018, CytoSMART™ was selected by Microsoft for its prestigious Scale Up program.

Today, CytoSMART's microscopy solutions are used in over a thousand laboratories around the world.

Lux2



World's smallest live-cell imager

The CytoSMART™ Lux2 is a compact inverted microscope for brightfield live-cell imaging to be used by every biological laboratory. The device operates at low-voltage and is designed for safe use in a regular CO₂-incubator. This enables you to minimize environmental changes, providing you more reliable and consistent experiments for less work.

- + **Compact** - It fits in any cell culture incubator
- + **User-friendly** - No training is needed to set up your experiment
- + **Easy access** - Monitor your cell culture in real-time from anywhere on any PC, laptop, or tablet.

How it works

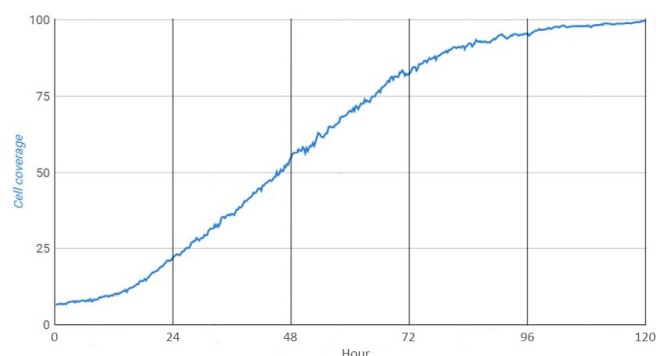
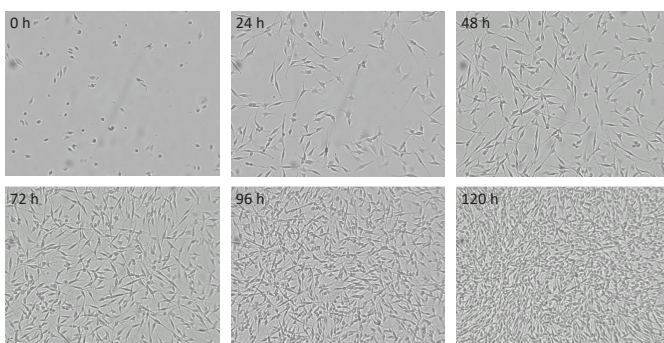
1. Place the culture vessel on the CytoSMART™ Lux2 in the incubator.
2. Connect the device to the PC, laptop, or tablet.
3. Start recording a time-lapse of your cell culture.

Applications

- + Monitor cell division
- + Monitor cell growth and confluence
- + Analyze cell migration and wound healing
- + Monitoring colony formation
- + Time-lapse imaging
- + Study chemotaxis
- + Study cells cultured inside microfluidic devices
- + Study stem cell differentiation
- + Cell culture QC

Live Cell Monitoring

Images of the growth of C6 cells after 0 and 120 h after seeding (**left**) with the corresponding quantitative analysis of the cell growth over time (**right**).



Lux3 FL



Improve your research with fluorescence live-cell imaging

The CytoSMART Lux3 FL is a small fluorescence live-cell imager equipped with one brightfield and two fluorescent channels (green and red). The device creates time-lapse movies from captured images at specific intervals (between 5 min - 12 h) that can be immediately accessed and analyzed remotely via the CytoSMART Cloud. This feature allows researchers to unravel cellular processes in real-time, providing valuable data of the cell cultures and running experiments.

- + Small, easy-to-use, and fully remote device that fits inside any standard incubator
- + Integrated image analysis of brightfield and fluorescence area/object count
- + Time-lapse movies to monitor the development of cellular processes

How it works

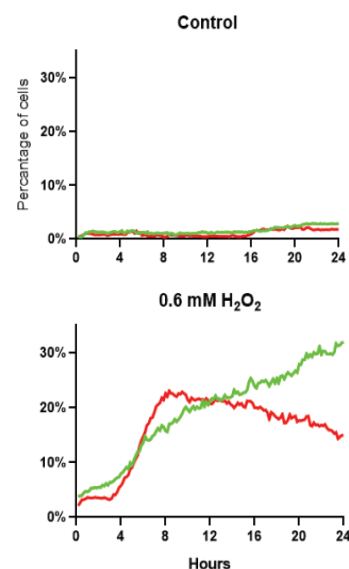
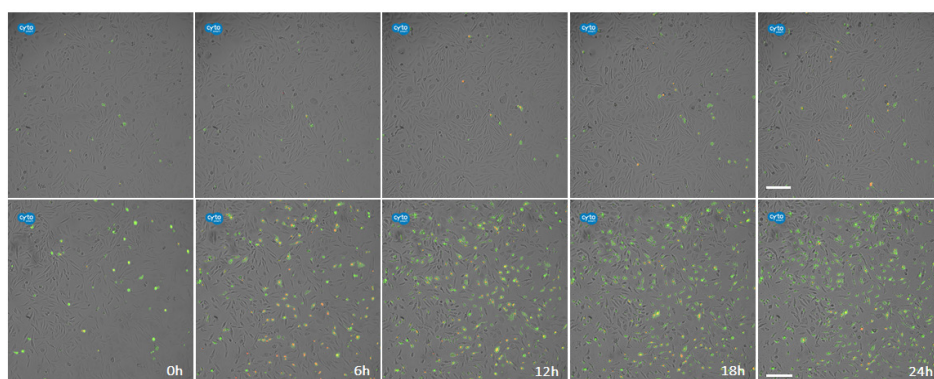
1. Place the culture vessel on the CytoSMART™ Lux3 FL in the incubator.
2. Connect the device's power cable and the USB3 cable to your PC or laptop.
3. Download the CytoSMART Lux3 FL application. Open the app to start.

Applications

- + Cell viability
- + Cellular processes
- + Hypoxia / oxidative stress markers
- + Transfection
- + Co-culture
- + Nanoparticles

Apoptosis Assay

Fluorescence live cell imaging after 0h, 6h, 12h, 18h and 24h using green (pSIVA; early apoptotic cells) and red dye (PI; late apoptotic/necrotic cells). Control group (**top**) and 0.6 mM H₂O₂ (**bottom**). Scale bar indicates 200 μm.





Compatible Staining

Green Channel

Ex: 452/45 nm, Em: 512/23 nm

Cytoplasm staining	Excitation	Emission
Cell Tracker Green	492 nm	517 nm
LuminiCell Tracker 540	423 nm	540 nm
Cell tracking dye kit - Green - Cytopainter	490 nm	520 nm
Cell Explorer fixable live cell tracking kit	490 nm	520 nm
BioTracker 488 Green CSFE cell proliferation kit	495 nm	519 nm
BioTracker 488 Green Mitochondria Dye	490 nm	523 nm

Organelle staining	Excitation	Emission
SYTO 13	488 nm	509 nm
SYTO 45	452 nm	484 nm
STYO 9	483 nm	503 nm
PKH67 Green fluorescent cell linker kit	490 nm	502 nm
BioTracker 488 Green Mitochondria Dye	490 nm	523 nm
MitoTracker Green FM	490 nm	516 nm
LysoSensor Green	443 nm	505 nm

Functional staining	Excitation	Emission
Calcein AM	495 nm	515 nm
pSIVA-IANBD	488 nm	530 nm
Annexin V Green Dye	490 nm	515 nm
CellEvent Caspase-3/7 Green detection reagent	503 nm	530 nm
BioTracker 515 Green ONOO- dye	490 nm	515 nm

Red Channel

Ex: 561/14 nm, Em: 630/90 nm

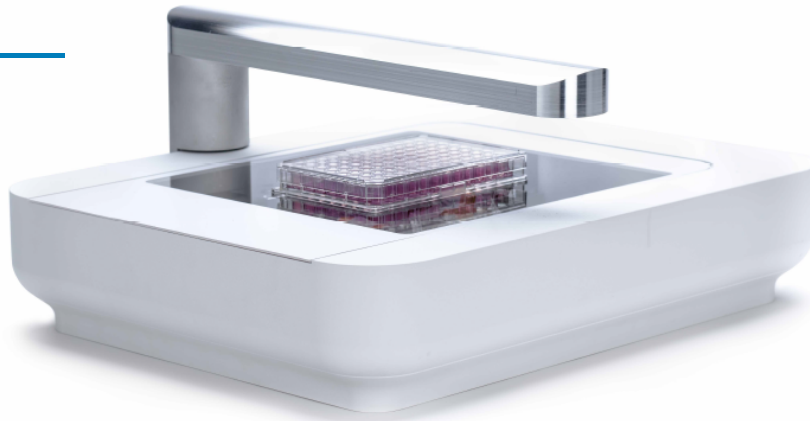
Cytoplasm staining	Excitation	Emission
Cell Tracker Orange	548 nm	576 nm
Cell Tracker Red	577 nm	602 nm
Cell Explorer fixable live cell tracking kit	570 nm	600 nm
Cell Explorer live cell tracking kit	570 nm	600 nm

Organelle staining	Excitation	Emission
SYTO 85	567 nm	583 nm
PHK26 Red fluorescent cell linker kit	551 nm	567 nm
BioTracker 555 Orange Cytoplasmic membrane dye	549 nm	565 nm
MitoTracker Orange CMTMRos & CM-H ₂ TMRos	554 nm	576 nm
MitoTracker Red CHXROS & CM-H ₂ XROS	579 nm	599 nm
MitoTracker Red FM / LysoTracker Red FM	581 nm	644 nm
BioTracker 555 UV-Excitation red lysosome dye	554 nm	583 nm

Functional staining	Excitation	Emission
CellTrace Calcein Red-Orange AM	577 nm	590 nm
Propidium Iodide	535 nm	617 nm
Annexin V Red Dye	593 nm	614 nm

The CytoSMART Lux3 FL is compatible with the following two-color fluorescence assay kits: LIVE/DEAD Cell Imaging Kit (488/570), Image-iT LIVE Red Poly Caspases Detection Kit, Image-iT LIVE Red Caspase-3 and -7 Detection Kit. Please contact us for more information.

Omni



World's fastest live-cell imager

The CytoSMART™ Omni is the first automated live-cell imager that fits inside a standard cell culture incubator. It can acquire a brightfield scan of any cell culture vessel within minutes and provides almost instant cloud-based image analysis of your cell culture. The large area scan is captured by moving the optics instead of the sample. The hardware is designed to make scanning extremely reliable, increasing the accuracy of your time-lapse data. It also enables you to perform experiments with sensitive or non-adherent cells without disturbing them.

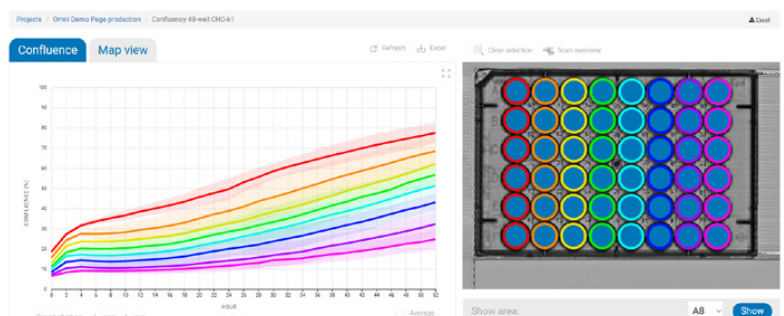
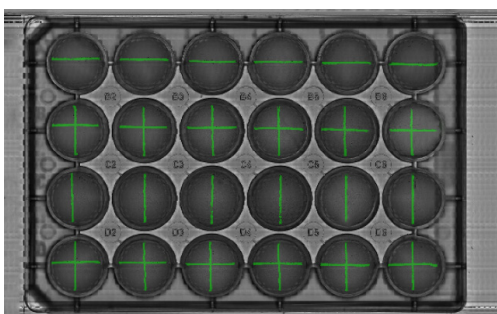
- + **Automated** - Quickly set up your experiment and walk away
- + **Flexible** - Scan any type of transparent culture vessel
- + **Fast** - Captures around 6,000 images in an area of 94 x 132 mm within minutes

Applications

- + Cell proliferation
- + Cell migration
- + Cytotoxicity
- + Colony detection
- + Cell culture quality control

Wound Healing Assay

Scratch analysis in a 24-well plate. **Left:** The map view mode in the CytoSMART™ cloud allows to zoom into a maximum of 10x magnification and pan through the scans of each time point to easily evaluate the results of your experiment. **Right:** Quantitative overview of the results can be generated for each well individually or for multiple wells as a group (average \pm standard deviation).



Ordering Information

Catalog Number	Type	Product Description
CS-JAB-1004	Device	CytoSMART™ Lux2
CS-JAC-1008	Device	CytoSMART™ Lux2 Duo
CS-JED-1008	Device	CytoSMART™ Lux2 Multi
CS-MAB-1008	Device	CytoSMART™ Lux3 FL
CS-MAC-1009	Device	CytoSMART™ Lux3 FL Duo
CS-XAB-1002*	Device	CytoSMART™ Omni
CS-ONA-1002	Cloud License	CytoSMART™ Connect 1 year
CS-VXA-1003	Cloud License	CytoSMART™ Connect for the lifespan
CS-RRB-1008	Cloud License	CytoSMART™ Connect Duo 1 year
CS-VXB-1008	Cloud License	CytoSMART™ Connect Duo for the lifespan
CS-ONB-1008	Cloud License	CytoSMART™ Connect Multi 1 year
CS-VYC-1008	Cloud License	CytoSMART™ Connect Multi for the lifespan
CS-HCA-1003	Warranty Extension	CytoSMART™ Lux2 – 1 Year Warranty Extension Package
CS-HEB-1008	Warranty Extension	CytoSMART™ Lux3 FL – 1 Year Warranty Extension Package

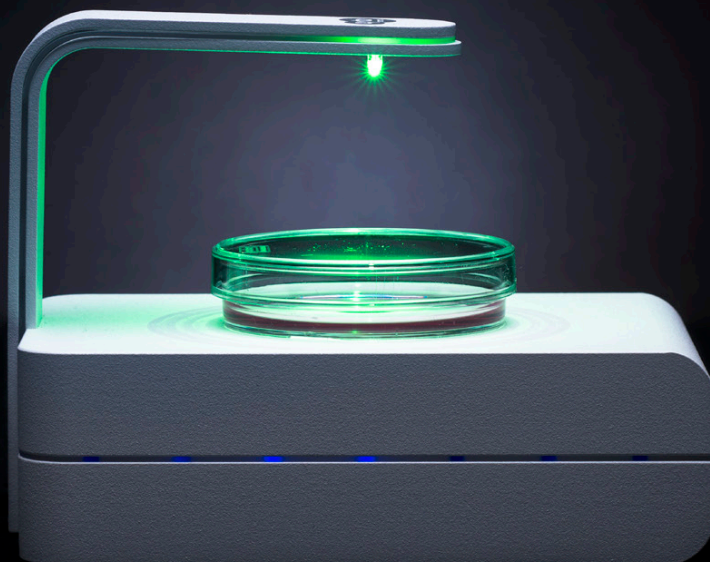
*CytoSMART™ Omni requires a separate cloud license and the automated analysis algorithms. Please contact us for more information.

Technical Specifications

	Lux2	Lux3 FL	Omni
Channels	BF with digital phase contrast	BF, green & red fluorescence channels	BF with digital phase contrast
Magnification	10x fixed objective, 20x digital zoom	10x fixed objective, 20x digital zoom	10x fixed objective - 517 pixels/mm
Light source	LED		
Fluorescence filters	N/A	Green: Ex. 452/45 nm, Em. 512/23 nm Red: Ex. 561/14 nm, Em. 630/90 nm	N/A
Camera	5 MP CMOS	6.4 MP CMOS	6.4 MP CMOS
Data formats	JPG, XLSX, MP4		
Image size	960 x 960 pixels	2072 x 2072 pixels	(960 x 960 pixels) x 6500
Field of view	1.84 x 1.84 mm	1.45 x 1.45 mm	(1.9 x 1.9 mm) x 6500
Recording interval	5 min - 12 h	5 min - 12 h	1 - 24 h
Culture vessels	Flasks, well plates, petri dishes, slides, microfluidic chips		
PC requirements	Windows 7/8.1/10, USB 2.0, Internet connection (WiFi or cabled)	Windows 10, USB 3.0, Internet connection (WiFi or cabled)	Windows 10, USB 3.0, Internet connection (WiFi or cabled)
Dimensions	133 x 90 x 100 mm (L x W x H)	166 x 140 x 135 mm (L x W x H)	396 x 345 x 171 mm (L x W x H)
Weight	0.5 kg	1.3 kg	9 kg
Operating conditions	5-40 °C, 20-95% humidity		
Data storage	Unlimited cloud storage		



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