

Cell analysis

## Guide to Invitrogen imaging systems

Clarity, brilliance, and safety

invitrogen

# Compact and portable imaging systems

Now you can have an easy-to-use cell imaging platform where you want it and when you want it. Simply place your Invitrogen™ EVOS™ imaging system in your desired location, flip the switch, and you'll typically be ready to go in under two minutes.

From intimate, hands-on demonstrations to presenting data in front of large audiences, EVOS imaging systems are perfect for teaching, sharing, learning, and discovery.



## Imaging made safer with EVOS imaging systems

- On-screen display (no oculars)
- Automated controls and minimal handling
- Swift decontamination
- Fits in biosafety cabinets
- Easy routine maintenance

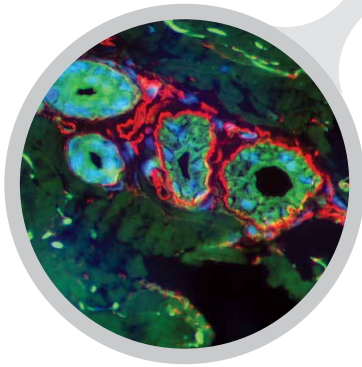
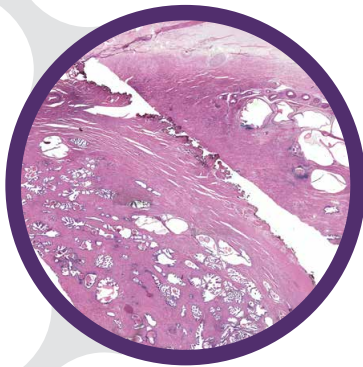
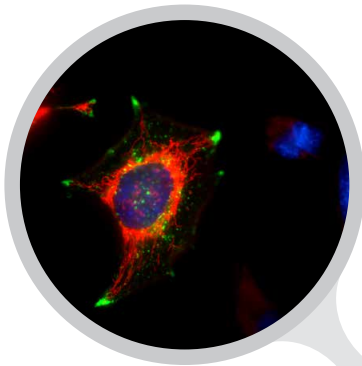
## Publication-quality imaging

In today's competitive scientific environment, generating publication-quality images is critical for your success. To help ensure you get the image quality you need, EVOS systems are designed with top-of-the-line imaging components, including:

- High-quality cameras and optics that capture high-resolution images
- LED illumination sources that provide exceptional signal-to-noise ratios
- Easy-to-use image processing and analysis software for images that are ready to publish

## Technology that's better for our environment

Traditional light sources for fluorescence microscopes are mercury-based bulbs that contain a carcinogen, requiring special handling and disposal. The LED light sources for EVOS systems are more efficient and eliminate the need for special handling, so they are more environmentally friendly.



Find out more at [thermofisher.com/evos](https://thermofisher.com/evos)

# EVOS imaging systems at a glance



	M7000	M5000	FLoid	XL Core
	Cat. No. AMF7000	Cat. No. AMF5000	Cat. No. 4471136	Cat. No. AMEX1000
	Fluorescence			Brightfield
<b>Hardware attributes</b>				
Simple installation	Yes	Yes	Yes	Yes
Installation and training	Service team	User	User	User
X/Y scanning stage	Motorized	Manual	Manual	Manual
Objectives	5	5	1 (fixed)	4
Objective range	1.25–100x	1.25–100x	20x	1.25–100x
Fluorescence channels	4	4	3 (fixed)	No
Optimized selectable LED light cubes	Yes	Yes	No	No
Monochrome or color camera option	Both	Mono with LED-based RGB illumination scheme	Mono	Color
Epifluorescence images	Yes	Yes	Yes	No
Transmitted-light images	Yes	Yes	Yes	Yes
Color images	Yes	Yes	No	Yes
Benchtop system	Yes	Yes	Yes	Yes
Suitable for use in tissue culture hood	No	Yes	Yes	Yes
Darkroom needed	No	No	No	No
Onstage incubator for time-lapse imaging	Optional	Optional	No	No
Time-lapse imaging	Multichannel	Multichannel	No	No
Autofocus	Yes	Yes	No	No
Z-stacking capability	Yes	Yes	No	No
Automated multi-well plate screening	Yes	No	No	No
Cloud connectivity	Yes*	Yes	No	No
USB ports	Yes	Yes	Yes	Yes
DVI ports	Yes	Yes	No	No
<b>Software attributes</b>				
Celleste Image Analysis Software	Optional	Optional	Optional	Optional
Intuitive onboard software	Yes	Yes	Yes	Yes
Networking capability	Yes	Yes	Yes	No
Automatic cell counting	Yes	Yes	No	No
Cell confluence app	Yes	Yes	No	No
Transfection efficiency app	Yes	Yes	No	No

\* Available with a networked computer.

Find out more at [thermofisher.com/evos](https://thermofisher.com/evos)

# EVOS M7000 Imaging System

## A powerful, fast, fully automated system

Bring high performance and fast, automated imaging right to your lab bench with the Invitrogen™ EVOS™ M7000 Imaging System.

This system has been designed with advanced capabilities to simplify demanding cell-based imaging applications like live-cell analysis, image tiling, and Z-stacking, so you can focus on acquiring images and data rather than instrument operation.

### Features

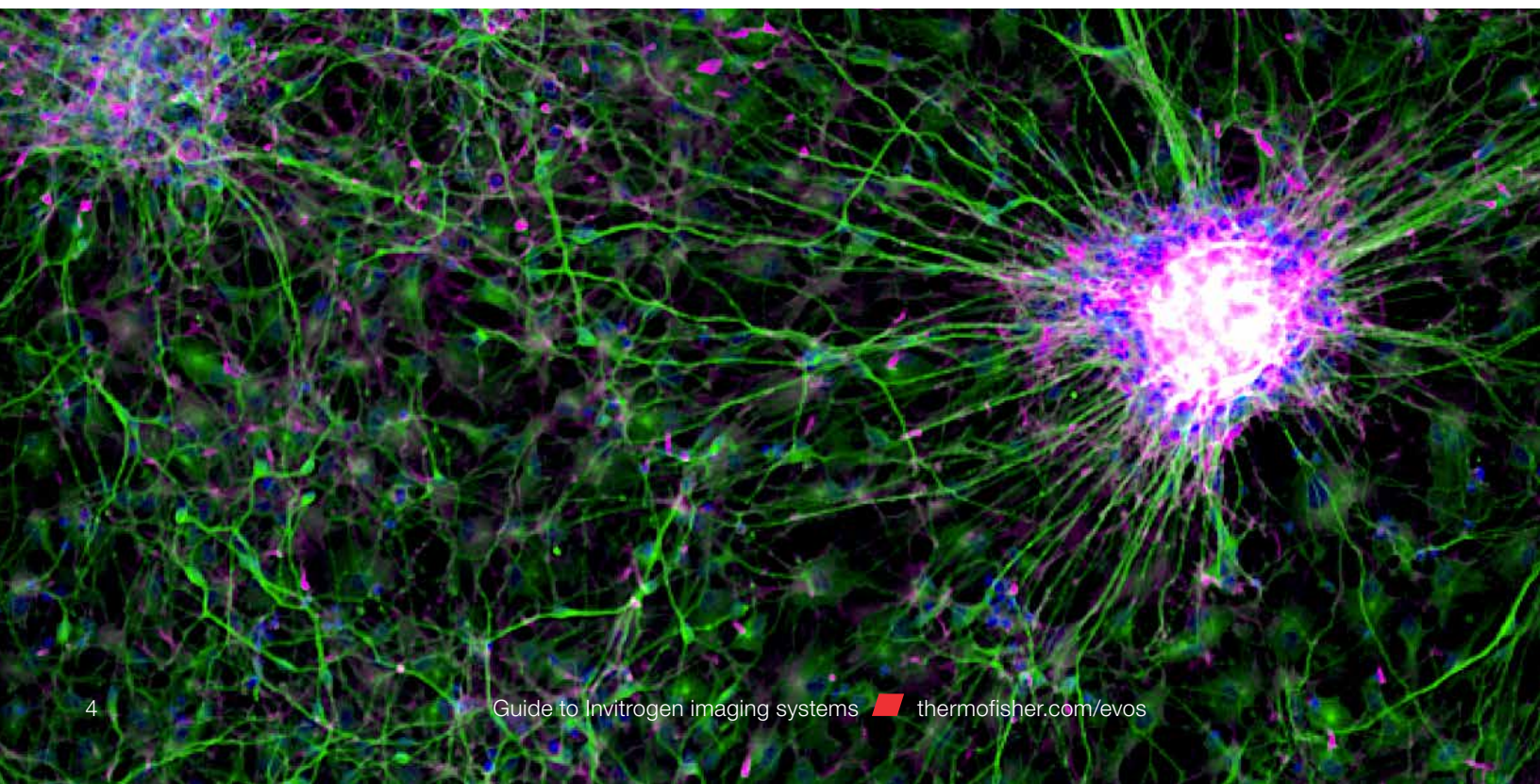
- **Speed**—Scan a 96-well plate in three fluorescence channels in less than 5 minutes.
- **Flexibility**—Customize your system with more than 14 interchangeable LED light cubes, monochrome and color cameras, a variety of objectives ranging from 1.25x to 100x, and a selection of vessel holders.
- **Time-lapse live-cell imaging**—The onstage incubator option enables precise control over temperature, humidity, and gas levels to maintain normoxic or hypoxic conditions. The onstage incubator allows a wide range of biological studies under physiological conditions.
- **Two cameras, no compromises**—All EVOS systems come with two dedicated cameras: a high-sensitivity monochrome camera optimized for fluorescence imaging and quantitation and a high-resolution color camera optimized for color imaging.

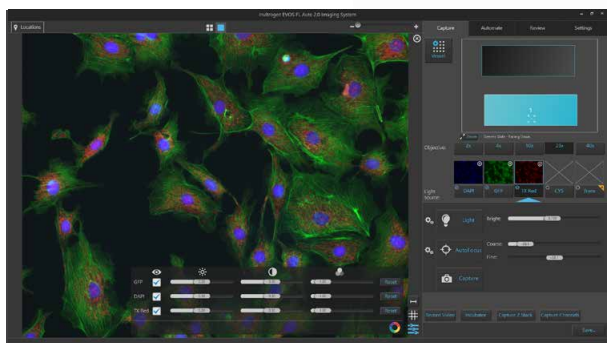
- **Area view**—Move rapidly and seamlessly between single-field mode and low- and high-magnification scan modes to easily define and capture the area of interest.
- **Automation**—Time-saving features such as autofocus, rapid stage movement, and automated routines help reduce time to complete experiments, allowing high throughput, high data quality, and improved experimental reproducibility.
- **Data analysis**—Extensive quantitative imaging and statistical analysis in combination with Invitrogen™ Celleste™ Image Analysis Software, an optional advanced software package offering powerful tools for image segmentation and classification that can be used for cell counting and for measuring changes in intensity, area, and shape over time.

### SmartStart installation and training

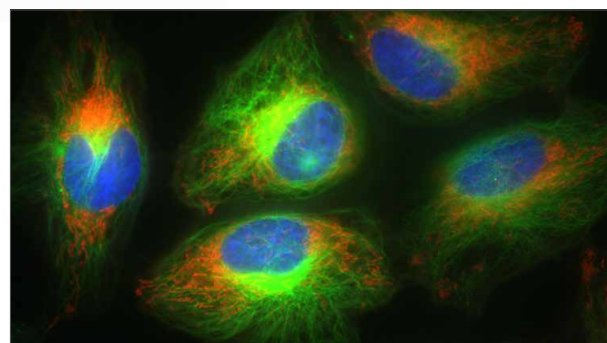
A specialized installation and training program will get you up and running in just one day. One of our dedicated field application scientists comes to your site to provide hands-on workflow training and make sure your lab is quickly enabled to utilize the instrument's powerful features to maximize productivity.

Neural stem cell colony; 10x objective; GFP and RFP light cubes.





Easy-to-navigate user interface.



Multiplex immunofluorescence staining with Invitrogen™ NucBlue™ Live ReadyProbes™ Reagent (blue), Tubulin Tracker™ Variety Pack (green), and CellLight™ Mitochondria-RFP, BacMam 2.0 (red) in HeLa cells.

## System highlights

Attribute	Details
Optics	Infinity-corrected optical system; RMS-threaded objectives with a 45 mm parfocal distance.
Imaging mode	Fluorescence, brightfield, color brightfield, and phase contrast.
Illumination	5-position chamber for 4 fluorescence light cubes plus brightfield imaging. Light cubes have >50,000-hour lifetimes and integrated hard-coated filters. We also offer a broad selection of standard and specialty light cubes.
Imaging methods	Single color; multicolor; area scan with montage or tile stitch; time-lapse; Z-stacking; movie capture.
Objective capacity	5-position turret
Objectives (not included)	Wide selection of high-quality long working distance (LWD) and coverslip-corrected objectives available.
Condenser	60 mm LWD condenser; 4-position turret with a clear aperture and 3 phase annuli.
Stage	Motorized X/Y scanning stage; 120 x 80 mm travel range with submicron resolution; drop-in inserts for vessel holders; lockdown holders to fix samples in place during long scans.
Focus mechanism	Automated focus with submicron resolution.
LCD display	23-inch high-resolution touchscreen color monitor that can also be controlled via mouse; 1,920 x 1,080 resolution.
Cameras	High-sensitivity 3.2 MP (2,048 x 1,536 pixel) monochrome CMOS sensor with 3.45 μm pixel resolution; high-sensitivity 3.2 MP (2,048 x 1,536 pixel) color CMOS sensor with 3.45 μm pixel resolution.
Computer	External Dell™ PC with Intel™ Core™ i7-8700 processor; 32 GB DDR4 RAM; 512 GB PCIe NCMc solid-state drive; NVIDIA™ Quadro RTX™ 4000 graphics card with 8 GB memory; Windows™ 10 software designed to operate with touchscreen monitor and microscope.
Captured images	8-bit TIFF, PNG, and JPG images; 16-bit RAW monochrome images (TIFF, PNG); movies and time-lapse images (AVI, WMV).
Output ports	Microscope: USB 3.1 Type B 4-pin power port. Computer: one USB 3.1 Gen 2 Type C; five USB 3.1 Gen 1 Type A; four USB 2.0 Type A; one serial; two 1.2 display; one RJ45; two PS/2; one UAJ; 1 line out.
Networking capability	Connect through Microsoft™ SMB port via Ethernet cable.
Power supply	24 V AC adapter with country-specific power cord.
Dimensions (L x W x H)	457 x 356 x 330 mm (18 x 14 x 13 in.)
Weight	16 kg (35 lb)

Find out more at [thermofisher.com/evosm7000](https://thermofisher.com/evosm7000)

# Live-cell imaging with the EVOS Onstage Incubator

## Cell imaging system with an onstage incubator

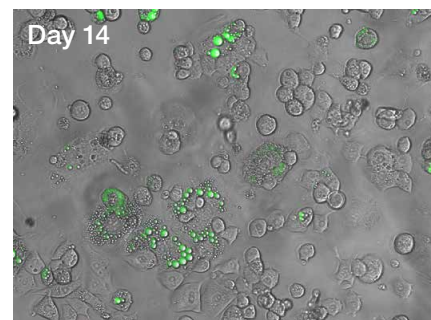
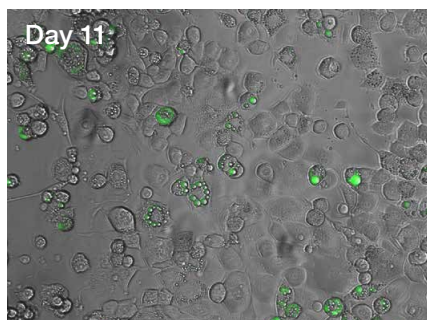
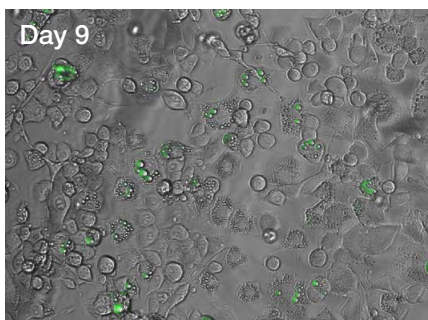
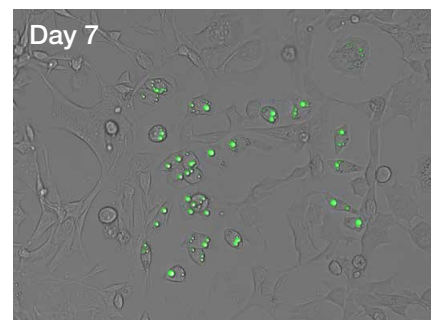
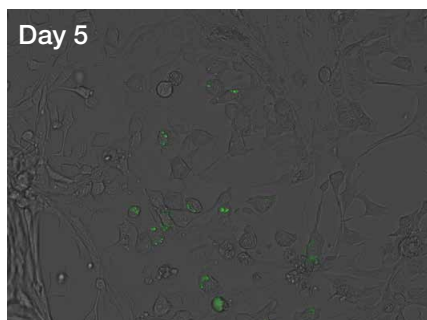
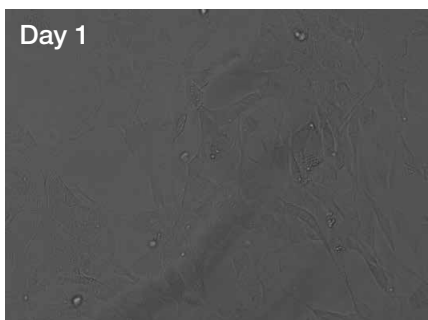
When paired with the Invitrogen™ EVOS™ Onstage Incubator, the EVOS M7000 Imaging System is ideal for long-term monitoring of cell cultures and time-lapse imaging at high resolution.

The EVOS Onstage Incubator is an environmental chamber that enables precise control over temperature, humidity, and three gas levels for time-lapse imaging of live cells under physiological and nonphysiological conditions, making it ideal for demanding hypoxia experiments. The EVOS Onstage Incubator allows you to:

- Intuitively set environmental and image-acquisition parameters
- Easily maintain physiological or nonphysiological conditions with precise control
- Adjust environmental parameters while experiments are running
- Save lab space with the small footprint and sleek design

Once you've captured your images, you can seamlessly create and export them as movies:

- Simultaneously create time-lapse images of every well in a 96-well plate
- Acquire time-lapse images in a single plane or in Z-stacks
- Autofocus in each channel and region of interest
- Metadata and time stamp included with each image frame in time-lapse movies



Time-lapse images of 3T3-L1 mouse fibroblasts. The cells develop more numerous and larger adiposomes as they differentiate into adipocytes in differentiation medium.

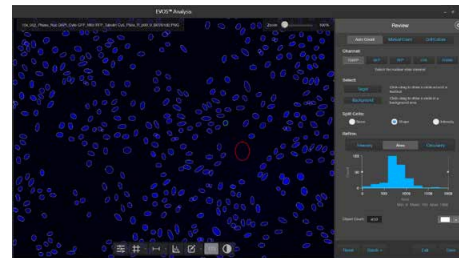
Find out more at [thermofisher.com/evososi](https://thermofisher.com/evososi)

EVOS Onstage Incubator specifications	
Compatible vessels	Multi-well plates; 35, 60, and 100 mm petri dishes; T-25 flasks; chamber slides
Temperature range	Ambient to 40°C
CO <sub>2</sub> range	0–20%
O <sub>2</sub> range	0% to ambient
Humidity range	>80% relative humidity at 37°C
Dimensions (H x D x W)	25 x 19 x 3.7 cm (environmental chamber) 37 x 16 x 20 cm (control unit)
Weight	1.5 kg (environmental chamber) 10 kg (control unit)
Compatible instruments	EVOS M5000 and EVOS M7000 Imaging Systems; Thermo Scientific™ CellInsight™ CX5, CX7, and CX7 LZR platforms

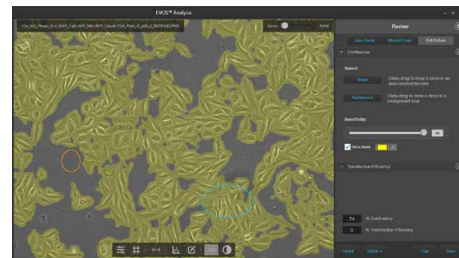
## Powerful and intuitive EVOS software

The onboard software for EVOS imaging systems offers pinpoint operational control and advanced image processing tools.

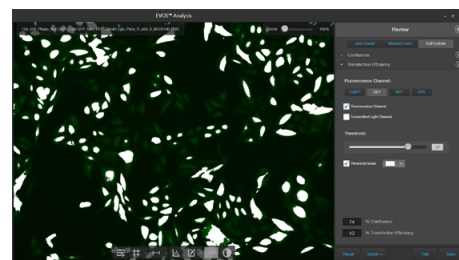
- Optimized autofocus allows you to measure specific areas marked in annotated images.
- View intensity information across the field or annotated shapes with a histogram.
- Obtain total counts and individual object information like brightness, size, and circularity.
- Measure and quantify cell coverage to obtain insight into growth and proliferation over time.
- Measure and document gene expression in a cell population.
- Obtain quantitative results by automatically applying auto counting, confluence, and/or transfection algorithms.
- Reduce stage acceleration and deceleration to prevent disruption of weakly adherent cells.
- Easily re-apply acquisition settings (light, focus, XY position) from a selected image to reimage or view samples under the same conditions.
- Easily transfer images from EVOS M7000 software to Celleste Image Analysis Software for analysis.



Automatic cell counting



Cell confluence app



Measure transfection efficiency in cultured cells

Find out more at [thermofisher.com/evososi](https://thermofisher.com/evososi)

# Celleste Image Analysis Software

## Generate publication-quality data with Celleste 6 Image Analysis Software

Invitrogen™ Celleste™ 6 Image Analysis Software is a full-feature image visualization and analysis suite with broad functionality and point-and-click simplicity. Designed for usability and flexibility, Celleste 6 software offers powerful tools for cell counting and sizing as well as classification, segmentation, and analysis of complex images. The software also includes machine learning algorithms for advanced image analysis and quantitation. Streamlined and customizable workflows afford repeatability and reproducibility across experiments. Celleste software licensing options include a single-user license (AMEP4942) and a network license with one seat (AMEP4941).

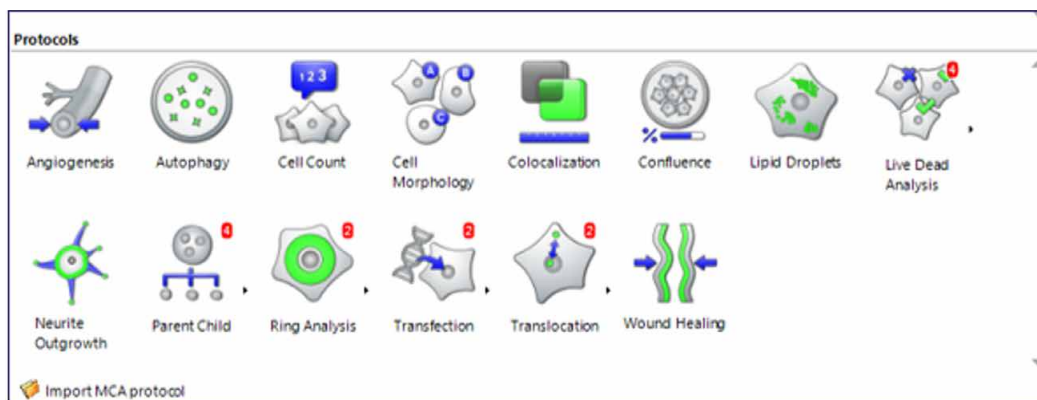
### Features of Celleste 6 Image Analysis Software include:

- Powerful image analysis capabilities for segmentation, classification, and quantification of single images or image batches
- Comprehensive image processing and enhancement functions with optional modules for deconvolution and three-dimensional rendering and analysis
- Rapid processing for manual and automatic measurements over multiple channels and images

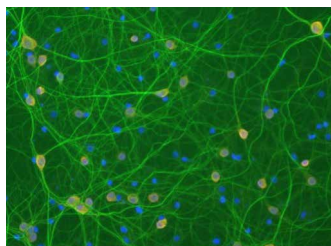
### Celleste 6 software multichannel analysis (MCA) tool

The Celleste 6 software MCA tool utilizes preconfigured algorithms and analysis templates trained on representative data to optimally segment and classify images generated in a range of common cell-based assays. Simply choose the app that corresponds to your assay, and follow the wizard-based workflow step by step from image to data generation.

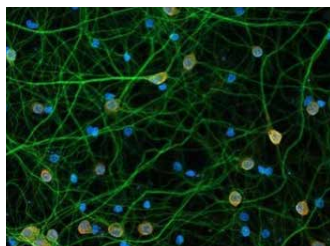
- Several formatting options for reporting well plate data, including heat maps, image montages, and kinetic graphs
- Channel-based relational measurements
- Dedicated step-by-step analysis workflows and protocols based on templates optimized for specific assays



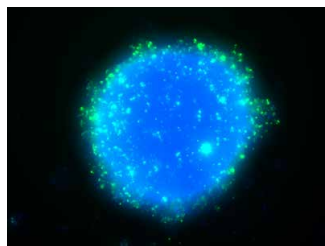
Celleste 6 multichannel analysis (MCA) templates.



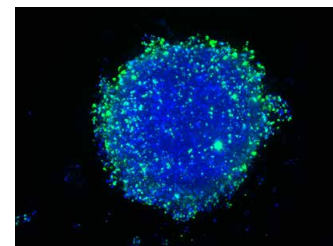
Widefield



Deconvolved



Widefield



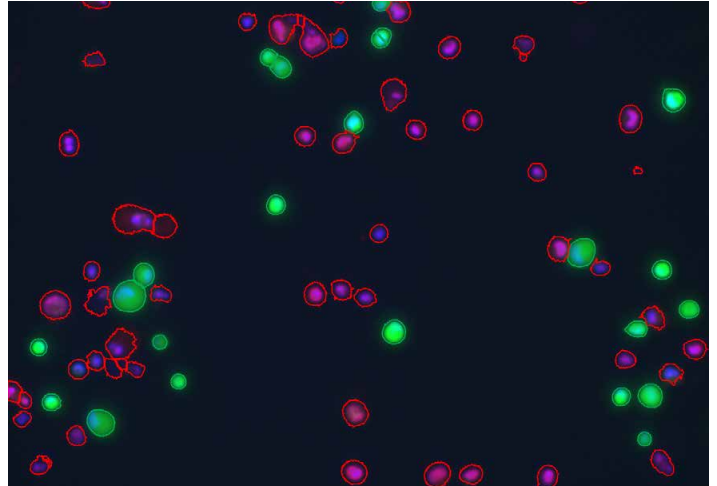
Deconvolved

Find out more at [thermofisher.com/celleste](https://thermofisher.com/celleste)



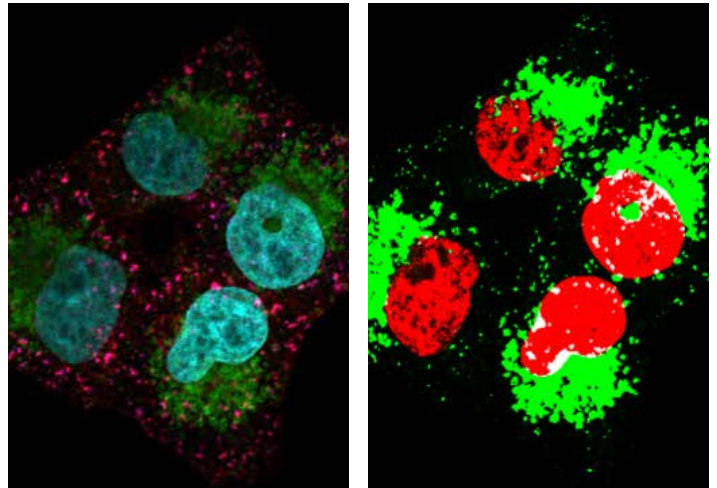
### Cell viability

Use Invitrogen™ LIVE/DEAD™ labeling kits to label your cells, then image them on the Invitrogen™ EVOS M5000 or M7000 Imaging System and count them using Celleste 6 Image Analysis Software.



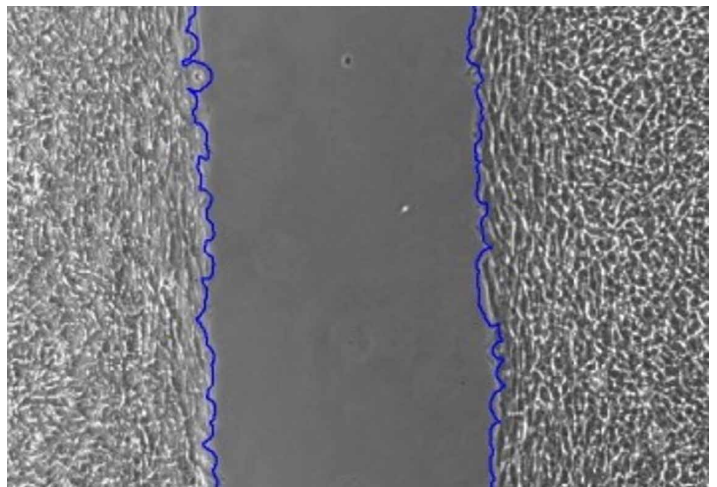
### Colocalization

Celleste 6 Image Analysis Software includes a colocalization feature that can map the spatial overlap between two or more fluorescent labels in two and three dimensions. With this feature, you can identify correlations between pairs of molecules.



### Wound healing

With the wound healing measurement feature, you can generate data about the migration rate and direction of healing with the touch of a button.



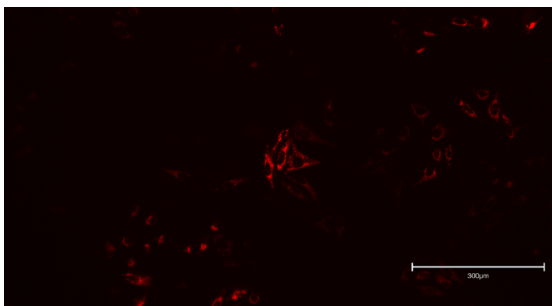
# EVOS M5000 Imaging System

Form, function, and flexibility in one system



## Features

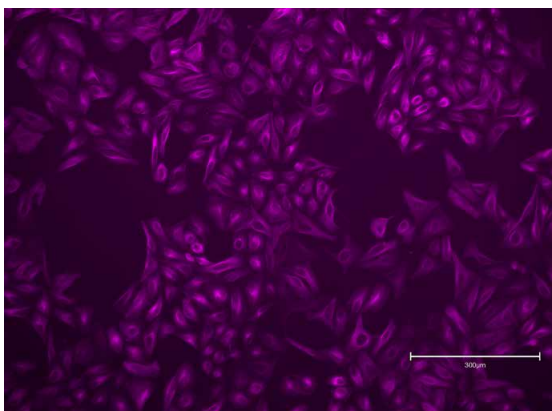
- Onboard software for acquisition, annotation, and analysis
- Machine learning–based cell counting and confluency analysis
- Autofocus, Z-stacking capability, time-lapse imaging, and multichannel capture with a single click
- Automated multichannel fluorescence
- High-resolution monochrome camera and novel LED-based color illumination modes
- Proprietary RGB illumination for color imaging
- Access images and data anytime, anywhere with internet access to the Thermo Fisher™ Cloud Platform



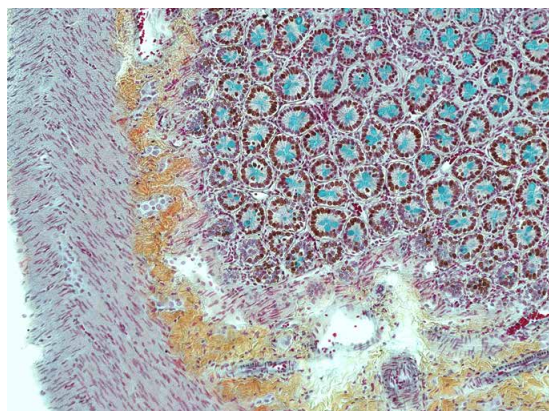
Fluorescence image captured in RFP channel using a Fluor 10x long working distance (LWD) PH objective.



Z-stack of honeybee claw imaged with the EVOS M5000 Imaging System.



Fluorescence image captured in Cy5 channel using a Fluor 10x LWD PH objective.



Unique and proprietary color illumination mode enables rendering of true color in transmitted light.

Find out more at [thermofisher.com/evosm5000](https://thermofisher.com/evosm5000)

## System highlights

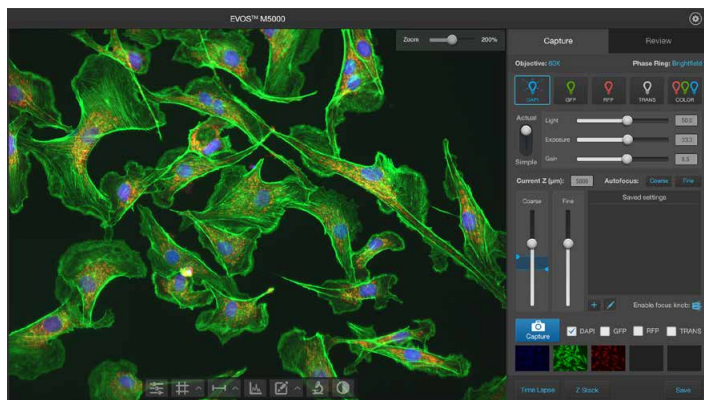
Hardware	Details
Illumination	LED light cubes with adjustable intensity; lifetime: >50,000 hours each.
Imaging	4-color fluorescence, transmitted light, and color imaging modes.
Contrast methods	Epifluorescence and transmitted light (for brightfield and phase contrast applications).
Objective turret	5-position control
Fluorescence channels	Simultaneously accommodates up to 4 fluorescent light cubes.
Condenser working distance	60 mm
Stage	Mechanical stage with x- and y-axis fine positioning controls and automated z-axis software controls; interchangeable vessel holders available.
Onboard display	18.5-inch high-resolution articulated LCD monitor.
Camera	Highly sensitive 3.2 MP monochrome CMOS camera (2,048 x 1,536 pixel) with 3.45 $\mu\text{m}$ pixel resolution.
Output ports	3 USB ports; 1 DVI port for direct output to an external USB device or network; Wi-Fi connectivity.
Power supply	AC adapter
Dimensions (W x L x H)	18 x 18 x 23 in. (46 x 46 x 59 cm)
Weight	36 lb (16 kg)

## Software

Designed by biologists for biologists, the EVOS M5000 Imaging System is remarkably easy to use. After seamless image acquisition, you can analyze, edit, and annotate saved images with a set of convenient tools that can be used in live mode and with saved images. For common applications, we have created easy-to-use image analysis tools that are driven by sophisticated segmentation algorithms. With a few clicks, you can get a total count of your DAPI-stained cells or estimate confluence for reproducibility when you split your cells. Once you have edited and analyzed your images, save the images and data on the integrated hard drive, an external USB device, a local network, or the Thermo Fisher Cloud Platform using the EVOS™ Image Analysis app.

## Applications

The EVOS M5000 system integrates precision components and a unique modern design to deliver high-quality 4-color fluorescence, transmitted-light, and color images with unprecedented flexibility. It is a fully integrated stand-alone system that combines precision optics, an articulated 18.5-inch high-resolution LCD monitor, and a highly sensitive 3.2 MP monochrome CMOS camera with 3.45  $\mu\text{m}$  pixel resolution. The monochrome camera affords the best sensitivity for detection of faint fluorescence signals and allows quantitative analysis. Using the system's unique and proprietary color illumination mode enables rendering of true color in transmitted light, which is useful when imaging stained tissue samples.



**Intuitive interface allows even a novice to acquire images like a pro in minutes.**

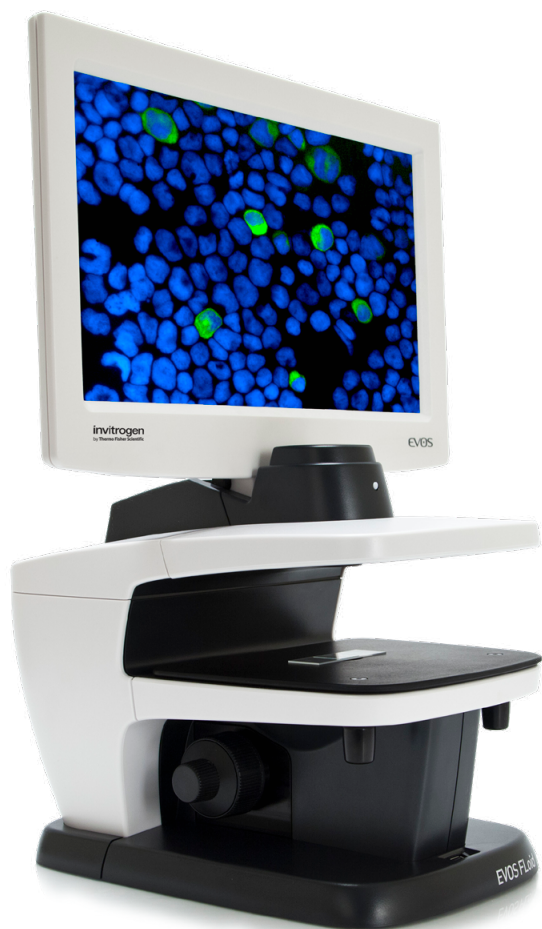
## Key software capabilities

- Confluence measurements
- Automated cell counting
- Z-stacking with multichannel composite overlay
- Batch analysis
- Multichannel time-lapse imaging

# EVOS FLoid Cell Imaging Station

## Simple, budget-friendly, 3-color fluorescence cell imaging

The Invitrogen™ FLoid™ Cell Imaging Station can be used for a broad range of applications, including routine tissue culture visualization and imaging with DAPI, GFP, and Invitrogen™ Texas Red™ dye. The EVOS FLoid Imaging Station is an excellent entry-level fluorescence microscopy instrument.



### Features

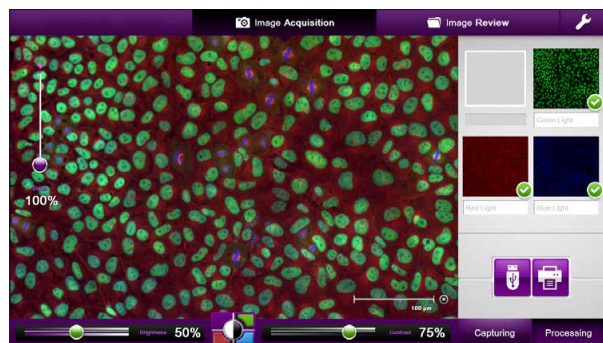
- **Simplicity**—The fully integrated system has an intuitive, multilingual user interface.
- **Speed**—Get results in a snap without warmup, cooldown, or filter changes.
- **Convenience**—Capture and print images on your bench rather than in the darkroom.
- **Robustness**—There are no moving parts, and the long-life LED cubes are reliable for everyday use.

### Software

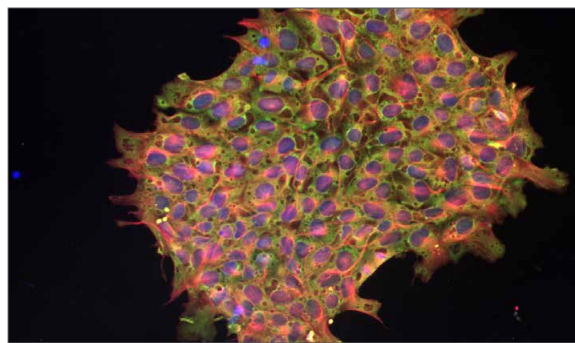
The EVOS FLoid Imaging Station makes capturing and processing 3-color fluorescence images as easy as taking pictures on your smartphone. All images acquired can be saved in JPEG, BMP, TIFF, and PNG formats.

### Key software features

- One-click multichannel overlay
- Icon-based operation
- Multiple language options
- Digital zoom



Screenshot of EVOS FLoid image processing software.



Human induced pluripotent stem cells; 20x objective; light cubes: GFP, RFP, and DAPI.

Find out more at [thermofisher.com/floid](http://thermofisher.com/floid)

# EVOS XL Core Imaging System

A simple and compact transmitted-light system that is perfect for use in a cell culture hood or a cell and tissue culturing facility

The Invitrogen™ EVOS™ XL Core Imaging System is the ideal cell culture and tissue culture microscope.



## Features

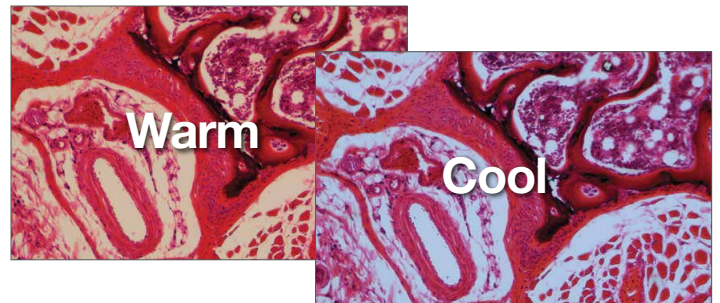
- Fits inside all culture hoods
- Cost-effective and user-friendly
- Easy installation; no maintenance, assembly, alignment, or calibration required
- Removable mechanical stage for precise imaging

## Software

Integrated software is a key component of this all-in-one system. Our software has a variety of useful features, such as color temperature control. All images acquired can be saved in JPEG, BMP, and TIFF formats.

## Key software features

- Easy-to-use interface
- Adjustable saturation and contrast
- Warm and cool color temperature control



Mouse tail cross-section imaged with a 20x objective.

Find out more at [thermofisher.com/xlcore](https://thermofisher.com/xlcore)

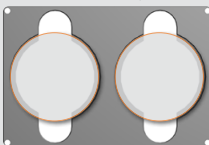
# EVOS vessel holders and stage plates

## All models

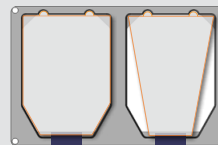
**AMEPVH009**  
Universal stage insert



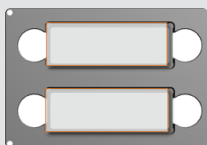
**AMEPVH003**  
Holds two 60 mm petri dishes



**AMEPVH005**  
Holds two 25 cm<sup>2</sup> flasks (rectangular or triangular)



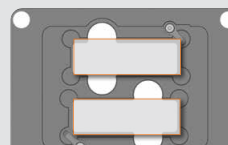
**AMEPVH001**  
Holds two 25 x 75 mm<sup>2</sup> standard microscope slides or chamber slides



**AMEPVH006**  
Holds one Thermo Scientific™ Nunc™ T-75 flask (75 cm<sup>2</sup>)



**AMEPVH021**  
Holds two microscope slides or chamber slides with retention clip



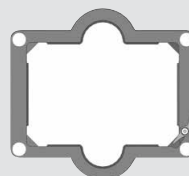
**AMEPVH004**  
Holds one 100 mm petri dish



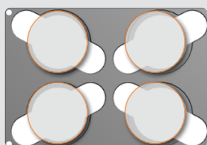
**AMEPVH007**  
Holds one hemocytometer



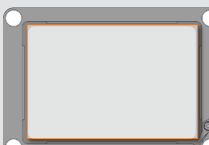
**AMEPVH022**  
Holds one multi-well plate with retention clip; serves as an adapter for AMEPVH001 through 018



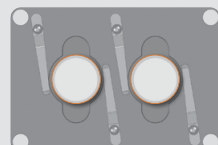
**AMEPVH002**  
Holds four 35 mm petri dishes



**AMEPVH028**  
Holds one multi-well plate with retention clip

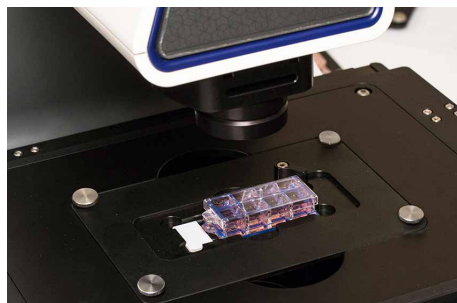
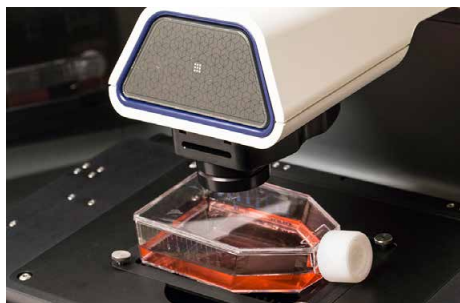


**AMEPVH030**  
Holds two 35 mm petri dishes



## Custom vessel holders

Need a vessel holder to accommodate your specialized plates, slides, culture dishes, or flasks? Contact us to create a specialty vessel holder for your EVOS imaging system.



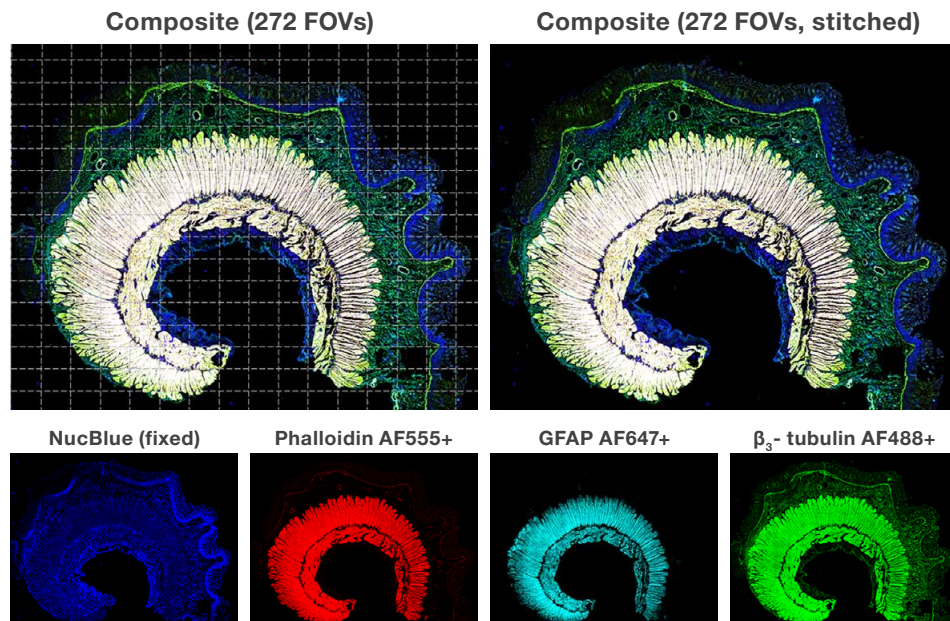
See a complete list of available vessel holders and stage plates at [thermofisher.com/evosvesselholders](https://www.thermofisher.com/evosvesselholders)

# Optimized light cubes

Invitrogen™ EVOS™ light cubes have been optimized to take cell imaging to the next level for publication-quality images. These interchangeable LED cubes enable precise control with plug-and-play capability.

## EVOS light cubes feature:

- An improved opto-mechanical design
- Superior illumination uniformity across the field of view (FOV)
- Multi-FOV stitching performance
- Spectrally optimized optical components
- Spectral fidelity across channels to eliminate undesirable bleed-through
- Maximum signal-to-background ratios, even with dim images
- Compatible with legacy EVOS light cubes



**Human cerebellum tissue stitching.** Images were acquired on an EVOS M7000 Imaging System fitted with a 10x Olympus™ air objective and DAPI, GFP, RFP, and Cy5 EVOS Light Cubes. The upper right image is a stitched composite of 272 individual FOVs. The individual panels below show the channels making up the composite.

## Optimized light cubes

Light cube	Description	Excitation (nm)	Emission (nm)	Dyes	Cat. No.
DAPI	EVOS Light Cube, DAPI 2.0	357/44	447/60	Alexa Fluor 350, BFP, DAPI, Hoechst, LysoTracker Blue, NucBlue Dead, NucBlue Live	AMEP4950
GFP	EVOS Light Cube, GFP 2.0	482/25	524/24	Alexa Fluor 488, CellROX Green, CellTracker Green, CyQuant Direct, FITC, GFP, MitoTracker Green, YOYO-1	AMEP4951
RFP	EVOS Light Cube, RFP 2.0	542/20	593/40	Alexa Fluor 555, CellMask Orange, CellROX Orange, CellTracker Orange, Cy3, MitoTracker Orange CMTMRos, pHrodo, RFP, rhod-2, SYTOX Orange	AMEP4952
Texas Red	EVOS Light Cube, Texas Red 2.0	585/29	628/32	Alexa Fluor 594, CellTracker Red CMTPX, DyLight 594, Katushka, LIVE/DEAD Fixable Red, mCherry, MitoTracker Red CMXRos, mKate, Texas Red	AMEP4955
Cy5	EVOS Light Cube, Cy5 2.0	635/18	692/40	Alexa Fluor 647, Alexa Fluor 660, Cy5, DRAQ5, NucRed Live 647, SYTO 60	AMEP4956

See a complete list of available light cubes at [thermofisher.com/evoslightcubes](https://www.thermofisher.com/evoslightcubes)

# EVOS objectives

Achromat objectives are suitable for general applications with standard correction of color and focus.

EVOS™ achromat objectives*									
Magnification	NA**	WD† (mm)	Brightfield	Phase	Long WD	Coverslip-corrected	Optimal vessel thickness (mm)	Oil	Cat. No.
2x	0.06	5.62	•		•		1.0–1.2		AMEP4931
4x	0.13	10.58	•	•	•		1.0–1.2		AMEP4932
10x	0.25	7.45	•	•	•		1.0–1.2		AMEP4933
20x	0.4	6.92	•	•	•		1.0–1.2		AMEP4934
40x	0.65	3.1	•	•	•		1.2		AMEP4635
	0.65	2.74	•	•	•		1.0		AMEP4935
50x	0.95	0.19	•			•	0.17	•	AMPFOP050
100x	1.25	0.15	•			•	0.17	•	AMPFOP100

\* Recommend 1.0 mm thickness for glass slides.

\*\* NA: numerical aperture.

† WD: working distance.

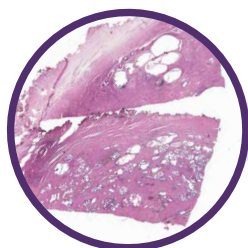
Fluorite objectives provide excellent resolution and have higher numerical apertures than achromat objectives.

Using fluorite objectives results in brighter fluorescence signals, enables higher-contrast imaging, and helps reduce optical aberrations. Color and focus have higher levels of correction.

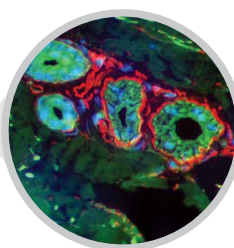
EVOS™ fluorite objectives*									
Magnification	NA	WD (mm)	Brightfield	Phase	Long WD	Coverslip-corrected	Optimal vessel thickness (mm)	Oil	Cat. No.
4x	0.13	10.58	•		•		1.0–1.2		AMEP4922
	0.13	10.58	•	•	•		1.0–1.2		AMEP4980
10x	0.3	7.13	•		•		1.0–1.2		AMEP4923
	0.3	7.13	•	•	•		1.0–1.2		AMEP4981
20x	0.5	2.5	•			•	0.17		AMEP4698
	0.45	6.23	•		•		1.0–1.2		AMEP4924
	0.45	6.12	•	•	•		1.0–1.2		AMEP4982
40x	0.65	2.8	•		•		1.2		AMEP4625
	0.65	1.79	•		•		1.0		AMEP4925
	0.65	1.6	•	•	•		1.2		AMEP4683
	0.65	1.79	•	•	•		1.0		AMEP4983
	0.75	0.72	•			•	0.17		AMEP4699
	1.3	0.2	•			•	0.17	•	AMEP4735
60x	0.75	2.2	•		•		1.2		AMEP4626
	0.75	1.28	•		•		1.0		AMEP4926
100x	1.28	0.21	•			•	0.17	•	AMEP4696

\* Recommend 1.0 mm thickness for glass slides.

Prostate tissue cross-section,  
10x objective.



Rat epidermis, 40x objective.



Find out more at [thermofisher.com/evosobjectives](https://thermofisher.com/evosobjectives)



Apochromat objectives provide the highest resolution, fluorescence brightness, contrast, and chromatic correction.

EVOS™ apochromat objectives								
Magnification	NA	WD (mm)	Brightfield	Phase	Long WD	Coverslip-corrected	Oil	Cat. No.
1.25x	0.04	5.11	•		•			AMEP4736
2x	0.08	6.22	•		•			AMEP4751
4x	0.16	13.0	•		•			AMEP4904
10x	0.4	3.1	•			•		AMEP4905
20x	0.8	0.6	•			•		AMEP4906
40x	0.95	0.18	•			•		AMEP4907
60x	1.42	0.15	•			•	•	AMEP4910
100x	1.45	0.13	•			•	•	AMEP4913

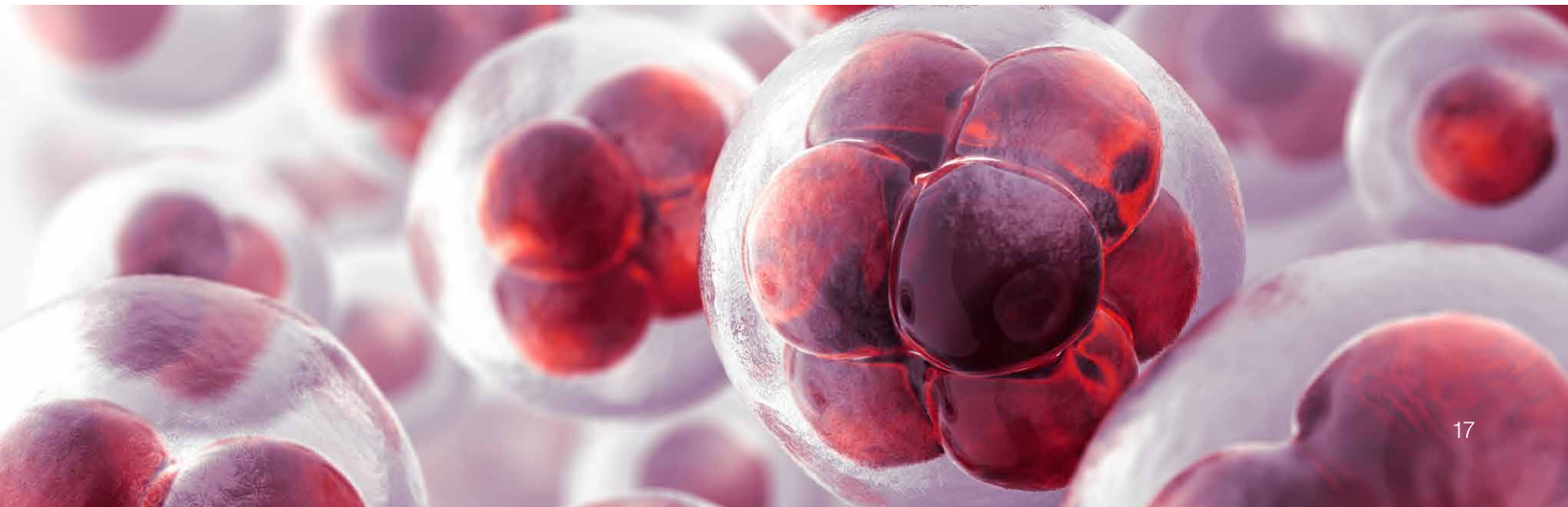
**Long working distance (LWD) vs. coverslip-corrected objectives**

**LWD objectives**

LWD objectives are optimized for use with vessels that have a nominal wall thickness of 0.9–1.5 mm, such as slides, flasks, and microtiter dishes.

**Coverslip-corrected objectives**

Coverslip-corrected objectives are optimized for use with #1.5 coverslips, which are approximately 0.17 mm thick. Coverslip-corrected objectives have higher magnification-to-numerical aperture (NA) ratios and provide greater resolution than LWD objectives.



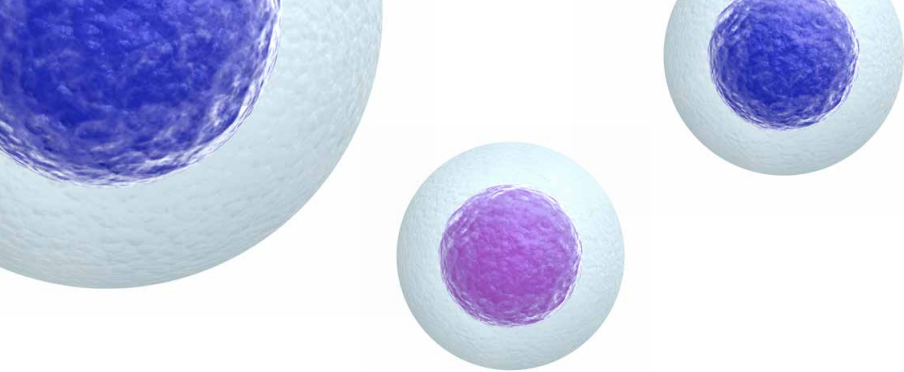
# Fluorophore selection guide

Use this guide to find the Invitrogen™ labeling tool that best matches your light source and experimental needs.

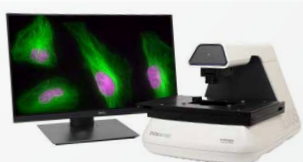
	EVOS Light Cube, DAPI 2.0 (AMEP4950) Ex: 357/44 nm; Em: 447/60 nm	EVOS Light Cube, GFP 2.0 (AMEP4951) Ex: 482/25 nm; Em: 524/24 nm
<b>Apoptosis</b>	Annexin V Conjugates for Apoptosis Detection (A23202)	CellEvent Caspase-3/7 Green (C10423) Click-iT Plus TUNEL Assay, Alexa Fluor 488 (C10617) Image-iT LIVE Green Caspase-3 and -7 Detection Kit (I35106)
<b>Autophagy</b>	-	Premo Autophagy Tandem Sensor RFP-GFP-LC3B Kit (P36239) Premo Autophagy Sensor LC3B-GFP (P36235) Premo Autophagy Sensor GFP-p62 Kit (P36240)
<b>Cell tracing and tracking</b>	CellTrace Calcein Blue, AM (C34853) CellTracker Blue CMAC Dye (C2110) CellTracker Blue CMF <sub>2</sub> HC Dye (C12881)	CellTrace Calcein Green, AM (C34852) CellTracker Green CMFDA Dye (C7025) Vybrant DiO Cell-Labeling Solution (V22886)
<b>Cytoskeleton stains</b>	Alexa Fluor 350 Phalloidin (A22281)	Alexa Fluor 488 Phalloidin (A12379) CellLight Actin-GFP (C10582) CellLight Tubulin-GFP (C10613) ActinGreen 488 ReadyProbes Reagent (R37110)
<b>Endocytosis</b>	-	CellLight Early Endosomes-GFP (C10586) pHrodo Green Dextran, 10,000 MW (P35368) LysoTracker Green DND-26 (L7526)
<b>Neuronal tracing and staining</b>	Alexa Fluor 350 Hydrazide (A10439)	NeuroTrace 500/525 Green Fluorescent Nissl Stain (N21480) DiO (D275) Alexa Fluor 488 Dextran (D22910)
<b>Nuclear stains</b>	DAPI (D1306) Hoechst 33342 (H3570) NucBlue Fixed Cell ReadyProbes Reagent (R37606)	SYTO 9 Green Fluorescent Nucleic Acid Stain (S34854) SYTOX Green Nucleic Acid Stain (S7020) CellLight Nucleus-GFP (C10602)
<b>Oxidative stress</b>	-	CellROX Green Reagent (C10444) CM-H <sub>2</sub> DCFDA (C6827) DAF-FM Diacetate (D23844)
<b>Phagocytosis</b>	-	pHrodo Green <i>E. coli</i> BioParticles Conjugate (P35366) pHrodo Green <i>S. aureus</i> BioParticles Conjugate (P35367) pHrodo Green Zymosan BioParticles Conjugate (P35365)
<b>Plasma membrane stains</b>	Wheat Germ Agglutinin, Alexa Fluor 350 Conjugate (W11263)	Wheat Germ Agglutinin, Alexa Fluor 488 Conjugate (W11261) CellMask Green Plasma Membrane Stain (C37608) CellLight Plasma Membrane-GFP (C10607)
<b>Proliferation</b>	-	Click-iT Plus EdU Alexa Fluor 488 Imaging Kit (C10637)
<b>Viability</b>	ReadyProbes Cell Viability Kit, Blue/Green (R37609) ReadyProbes Cell Viability Kit, Blue/Red (R37610)	LIVE/DEAD Viability/Cytotoxicity Kit (L3224) LIVE/DEAD Cell Imaging Kit (488/570) (R37601) ReadyProbes Cell Viability Kit, Blue/Green (R37609)



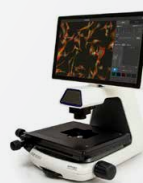
Find out more at [thermofisher.com/microscopes](https://thermofisher.com/microscopes)



EVOS Light Cube, RFP 2.0 (AMEP4952) Ex: 542/20 nm; Em: 593/40 nm	EVOS Light Cube, Texas Red 2.0 (AMEP4955) Ex: 585/29 nm; Em: 628/32 nm	EVOS Light Cube, Cy5 2.0 (AMEP4956) Ex: 635/18 nm; Em: 692/40 nm
Annexin V Conjugates for Apoptosis Detection (A35108) Image-iT LIVE Red Caspase-3 and -7 Detection Kit (I35102) Image-iT LIVE Red Poly Caspases Detection Kit (I35101)	Click-iT Plus TUNEL Assay, Alexa Fluor 594 (C10618) Annexin V, Alexa Fluor 594 Conjugate (A13203)	Click-iT Plus TUNEL Assay, Alexa Fluor 647 (C10619) Annexin V, Alexa Fluor 647 Conjugate (A23204)
Premo Autophagy Tandem Sensor RFP-GFP-LC3B Kit (P36239) Premo Autophagy Sensor LC3B-RFP (P36236) Premo Autophagy Sensor RFP-p62 Kit (P36241)	-	-
CellTracker Orange CMRA Dye (C34551) CellTracker Orange CMTMR Dye (C2927) Vybrant Dil Cell-Labeling Solution (V22885)	CellTracker Red CMTPX Dye (C34552)	CellTracker Deep Red Dye (C34565) Vybrant DiD Cell-Labeling Solution (V22887)
Alexa Fluor 555 Phalloidin (A34055) CellLight Actin-RFP (C10583) CellLight Tubulin-RFP (C10614) ActinRed 555 ReadyProbes Reagent (R37112)	Alexa Fluor 594 Phalloidin (A12381)	Alexa Fluor 647 Phalloidin (A22287)
CellLight Early Endosomes-RFP (C10587) pHrodo Red Dextran, 10,000 MW (P10361) pHrodo Red Epidermal Growth Factor (EGF) Conjugate (P35374)	LysoTracker Red DND-99 (L7528)	LysoTracker Deep Red (L12492)
Dil (D282) Alexa Fluor 555 Dextran (D34679) Tetramethylrhodamine Dextran (D1817)	Alexa Fluor 594 Hydrazide (A10438) Alexa Fluor 594 Biocytin (A12922) Alexa Fluor 594 Dextran (D22913)	DiD (D7757) Alexa Fluor 647 Hydrazide (A20502) Alexa Fluor 647 Dextran (D22914)
SYTO 82 Orange Fluorescent Nucleic Acid Stain (S11363) CellLight Nucleus-RFP (C10603)	-	TO-PRO-3 Iodide (T3605) HCS NuclearMask Deep Red Stain (H10294)
CellROX Orange Reagent (C10443) Dihydroethidium (D11347)	MitoSOX Reagent (M36008)	CellROX Deep Red Reagent (C10422)
pHrodo Red <i>E. coli</i> BioParticles Conjugate (P35361) pHrodo Red <i>S. aureus</i> BioParticles Conjugate (A10010) pHrodo Red Zymosan BioParticles Conjugate (P35364)	-	-
Wheat Germ Agglutinin, Alexa Fluor 555 Conjugate (W32464) CellMask Orange Plasma Membrane Stain (C10045) CellLight Plasma Membrane-RFP (C10608)	Wheat Germ Agglutinin, Alexa Fluor 594 Conjugate (W11262)	Wheat Germ Agglutinin, Alexa Fluor 647 Conjugate (W32466) CellMask Deep Red Plasma Membrane Stain (C10046)
Click-iT Plus EdU Alexa Fluor 555 (C10638)	Click-iT Plus EdU Alexa Fluor 594 Imaging Kit (C10639)	Click-iT Plus EdU Alexa Fluor 647 Imaging Kit (C10640)
LIVE/DEAD Viability/Cytotoxicity Kit (L3224) ReadyProbes Cell Viability Kit, Blue/Red (R37610)	LIVE/DEAD Cell Imaging Kit (488/570) (R37601)	NucRed Dead 647 ReadyProbes Reagent (R37113)



**EVOS M7000 Imaging System**

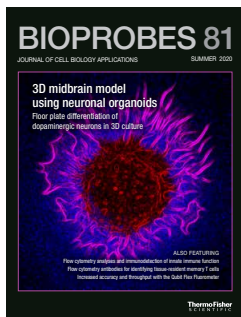


**EVOS M5000 Cell Imaging System**

# Educational resources

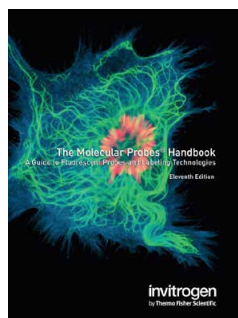
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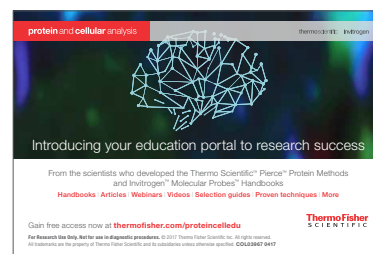
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## Ordering information

Product	Cat. No.
EVOS M7000 Imaging System	AMF7000
EVOS Onstage Incubator	AMC1000
EVOS M5000 Cell Imaging System	AMF5000
EVOS FLoid Imaging System	4471136
EVOS XL Core Imaging System	AMEX1000

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