ThermoFisher SCIENTIFIC

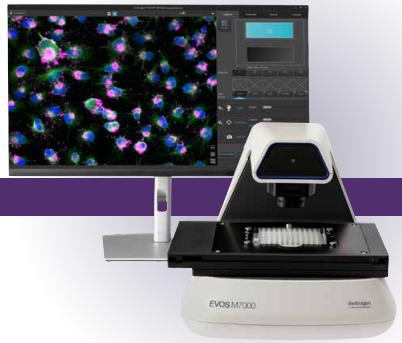
Guide to EVOS imaging systems

Clarity, brilliance, and simplicity

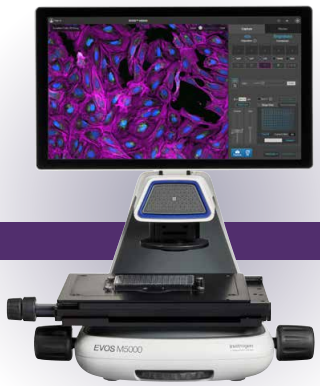
invitrogen

Simple yet powerful imaging systems

Invitrogen™ EVOS™ imaging systems are designed to help eliminate the complexities of high-end microscopy without compromising performance. Exceptionally versatile, intuitive EVOS microscopes are excellent for a broad range of imaging applications—including cell culture, time-lapse imaging, and high-resolution image capture from slides, dishes, flasks, and microplates. EVOS systems deliver publication-quality images and data in no time, over time, and every time at an exceptional value.



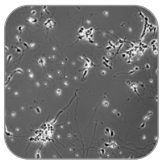
Invitrogen™ EVOS™ M7000 Imaging System



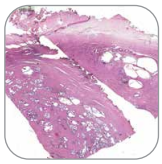
Invitrogen™ EVOS™ M5000 Imaging System

Invitrogen™ EVOS™ M3000 Imaging System

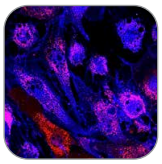
Brightfield, phase contrast, true color, and fluorescence



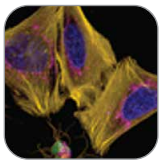
Cell culture



Tissue sections

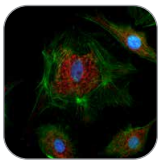


Cell viability



Cell death

Cell structure



Cell proliferation

Publication-quality imaging

In today's competitive scientific environment, generating publication-quality images is critical for your success. EVOS systems are designed with premium imaging components, including:

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

Compact and efficient design

EVOS microscopes are designed with scientists' workplace and workflow needs in mind. Components and controls are conveniently integrated into a single lightweight system that allows you to capture and view images when and where needed.

- No darkroom required
- On-screen display (no oculars)
- Automated controls and minimal handling
- BSL-3 compatible
- Fits in biosafety cabinets

Simplicity and sophistication

The easy-to-use software allows both novice and advanced users to take brilliant images within minutes. It includes many standard features such as multichannel image acquisition and onboard applications for confluency, transfection efficiency, and cell counting.

- Customizable to your specific needs
- Intuitive software supports multi-user environments
- No assembly, alignment, or calibration required

Table 1. EVOS imaging systems at a glance.

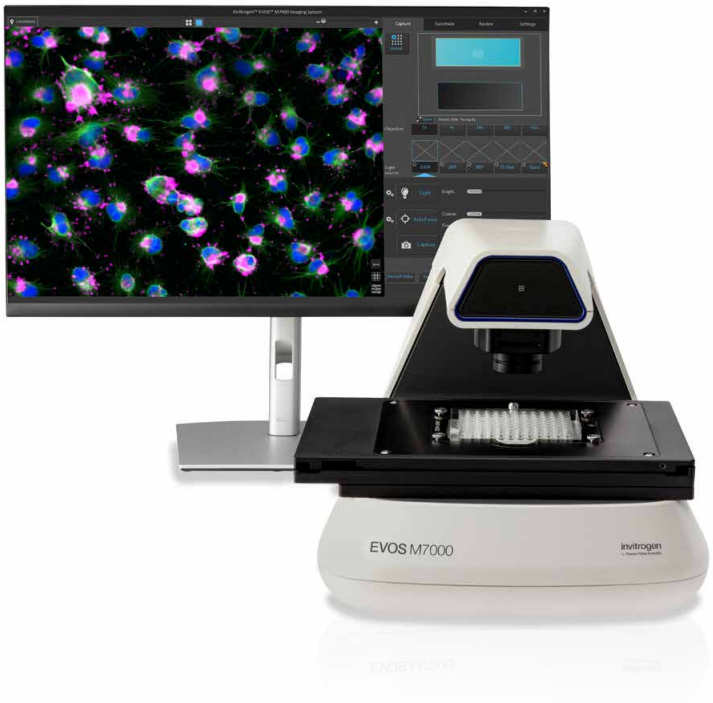
	M7000	M5000	M3000
	Cat. No. AMF7000	Cat. No. AMF5000SV	Cat. No. AMF3000
	Fluorescence, color, and phase contrast		
Hardware attributes			
Simple installation	Yes	Yes	Yes
Installation and training	Service team	User or service team	User
Stage operation	Motorized	Manual (stage tracking)	Manual
Mechanical stage	Yes	Yes	Optional
Objective turret positions	5	5	4
Objective range (magnification)	1.25–100x	1.25–100x	1.25–60x
Fluorescence channels	4	4	2
Customizable fluorescence LED light cubes	Yes	Yes	Yes
Monochrome or color camera	Both	Mono with LED-based RGB illumination scheme	Color
Epifluorescence imaging	Yes	Yes	Yes
Phase-contrast imaging	Yes	Yes	Yes
Transmitted-light imaging	Yes	Yes	Yes
Color images	Yes	Yes	Yes
Benchtop system	Yes	Yes	Yes
Suitable for use in tissue culture hood	No	Yes	Yes
Darkroom needed	No	No	No
Onstage incubator for time-lapse imaging	Optional	Optional	No
Time-lapse imaging	Multichannel	Multichannel	No
Autofocus	Yes	Yes	No
Z-stacking capability	Yes	Yes	No
Automated multiwell plate screening	Yes	No	No
Cloud connectivity	Yes*	Yes	Yes
USB ports	Yes	Yes	Yes
External monitor support	Yes	Yes	Yes
Software attributes			
Invitrogen™ Celleste™ Image Analysis Software	Optional	Optional	Optional
Intuitive onboard software	Yes	Yes	Yes
Networking capability	Yes	Yes	Yes
Cell counting application	Yes	Yes	No
Cell confluency application	Yes	Yes	Yes
Transfection efficiency application	Yes	Yes	No
Stage-tracking intelligence	Yes	Yes	No

* Available with a networked computer.

EVOS M7000 Imaging System

Make way for more powerful imaging

The fully automated EVOS M7000 Imaging System was designed to simplify the most demanding slide and cell-based imaging applications, including live-cell analysis, image tiling, and Z-stacking. It is equipped with advanced 2D deconvolution capabilities, which increase signal-to-noise ratios (SNRs) and provide clean, accurate information, allowing you to reveal hidden insights within your samples.



Features:

- **Full automation**—automated routines help streamline workflows and improve experimental reproducibility
- **Speed**—scan a 96-well plate in 3 fluorescence channels in less than 5 minutes
- **Two cameras, no compromises**—dedicated cameras for color and fluorescence produce high-resolution images and data
- **Time-lapse live-cell imaging**—optional onstage incubator enables precise control over temperature, humidity, and gas levels
- **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
- **Data analysis**—seamlessly transfer images to optional Celleste Image Analysis Software for access to powerful tools for image segmentation, classification, and cell-based assays

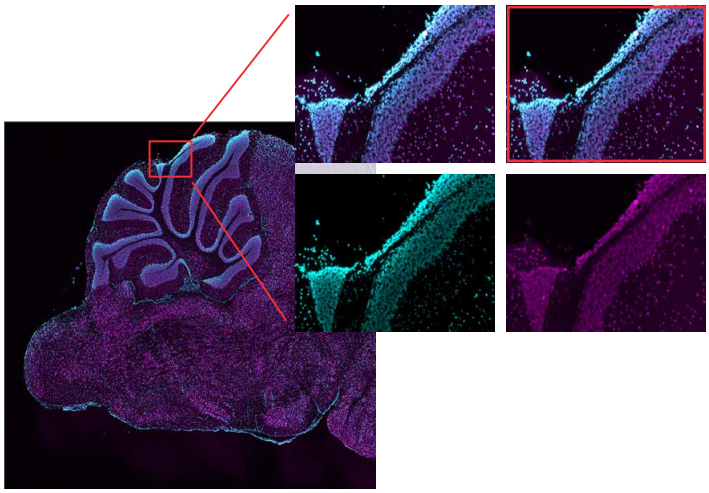


Figure 1. Stitching of sagittal mouse brain section stained for neuronal and glial markers.

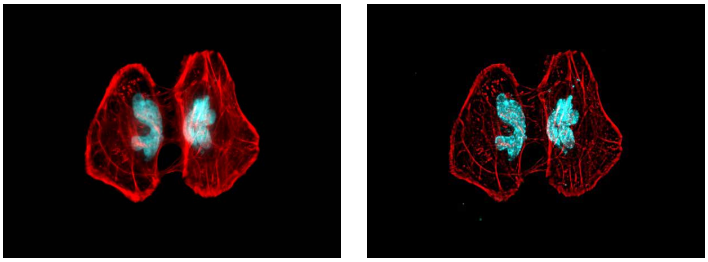


Figure 2. HeLa cells labeled with Invitrogen™ Alexa Fluor™ Plus 555 Phalloidin (Cat. No. A30106) and Invitrogen™ NucBlue™ Live ReadyProbes™ Reagent (Cat. No. R37605) before and after 2D deconvolution with Celleste software.

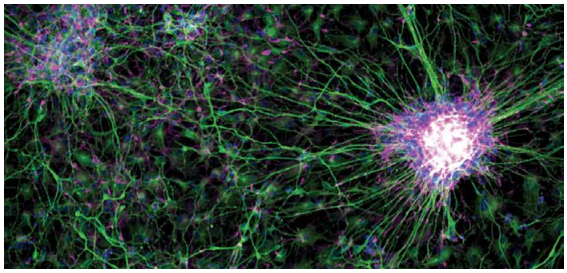


Figure 3. Compact LED light cubes are easy to change and produce excellent signal-to-noise ratios. Neural stem cell colony imaged with a 10x objective, using Green Fluorescent Protein (GFP, Cat. No. AMEP4951) and Red Fluorescent Protein (RFP, Cat. No. AMEP4955) light cubes.

Table 2. EVOS M7000 Imaging System specifications.

Attribute	Details
Optics	Infinity-corrected optical system; RMS-threaded objectives with a 45 mm parfocal distance
Imaging modes	Fluorescence, brightfield, color brightfield, and phase contrast
Illumination	5-position chamber for 4 fluorescent light cubes plus brightfield imaging; adjustable-intensity LED light cubes have >50,000-hour lifetimes
Imaging methods	Single color; multicolor; area scan with montage or tile stitch; time-lapse; Z-stacking; movie capture
Objective capacity	5-position automated turret
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
Autofocus	Automated focus with submicron resolution
Display	27-inch high-resolution 4K color monitor; 3,840 x 2,160 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™ 12th generation processor with 128 GB memory and 2 TB storage; NVIDIA™ Quadro RTX™ A4000 graphics card
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	Ethernet capability or Wi-Fi dongle
Power supply	24 V AC adapter with country-specific power cord
Dimensions (L x W x H)	45.7 x 35.6 x 33 cm (18 x 14 x 13 in.)
Weight	26 kg (57 lb)
Onboard applications	Cell counting, cell confluency, transfection efficiency, 2D deconvolution

Intuitive software interface

The easy-to-use, streamlined workflow allows both novice and experienced users to take brilliant images within minutes. For example, image enhancements on the EVOS M5000 and M7000 systems include brightness, contrast, and gamma for each channel. Also, an intensity histogram window can be opened, which displays the pixel count vs. intensity plot.

Ordering information

Description	Cat. No.
EVOS M7000 Imaging System	AMF7000
EVOS M7000 Imaging System, High-Content Analysis Package with 3D	AMF7000HCA3D
EVOS M7000 Imaging System, High-Content Analysis Package	AMF7000HCA

Learn more at **thermofisher.com/evosm7000**

EVOS M5000 Imaging System

Find your cells again and again

The fully integrated EVOS M5000 Imaging System delivers high-quality four-color fluorescence, transmitted light, phase contrast, and color images with excellent flexibility. The proprietary Stage View feature allows you to track your location as you manually move the stage and search for your cells. Sets of pins can be saved as a map, allowing you to return and easily relocate areas of interest in your sample.

Features:

- **Stage-tracking intelligence**—effortlessly locate, track, record, and return to precise areas of interest at any time
- **Performance**—autofocus, Z-stack capability, time-lapse imaging, and multichannel capture with a single click
- **Onboard analytics**—easy access to machine learning–based bioapplications for cell counting, transfection efficiency, and confluency
- **Easy self-installation**—no maintenance, assembly, alignment, or calibration
- **True color**—proprietary RGB illumination mode renders true color in transmitted light
- **Connectivity**—access images and data anytime, anywhere with internet access to the Thermo Fisher™ Connect Platform

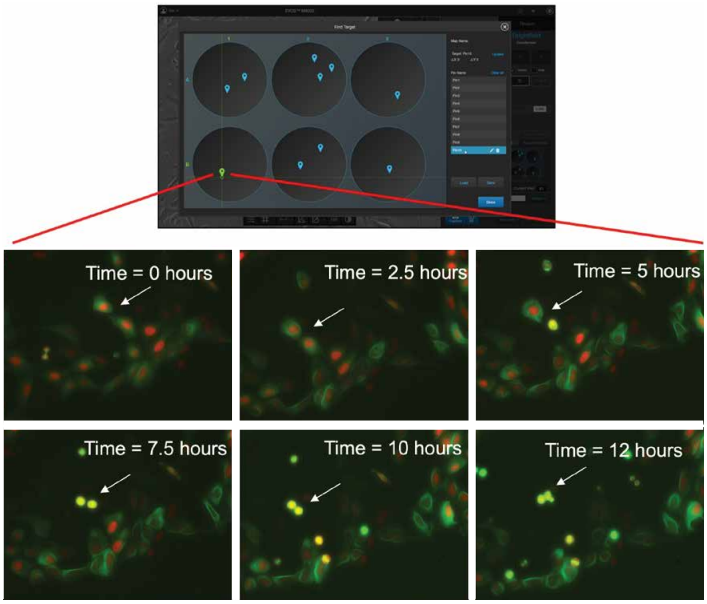


Figure 4. Easily return to the same cells with a manual microscope using location intelligence of the Stage View feature of the EVOS M5000 Imaging System. U2OS cells incubated with Invitrogen™ CellLight™ Tubulin-GFP, BacMam 2.0 (Cat. No. C10613) and CellLight™ Nucleus-RFP, BacMam 2.0 (Cat. No. C10603) were treated with 1 mM paclitaxel. Multiple pins were placed using Stage View at time 0; cells located at pin 9 were easily located and imaged from 2.5 to 12 hours.

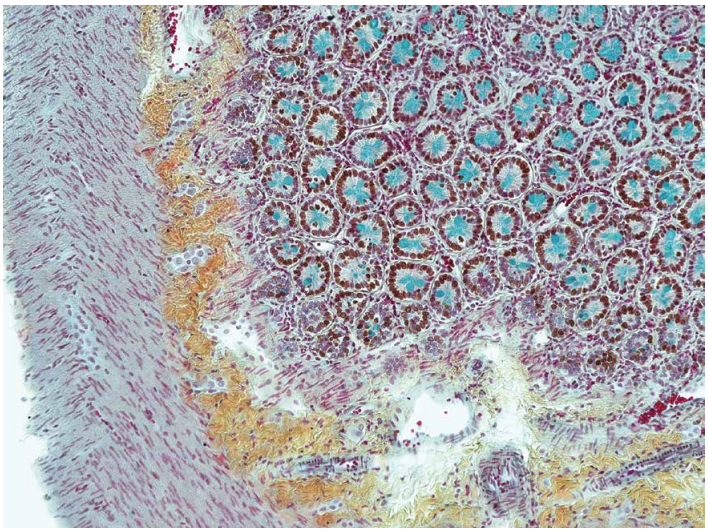


Figure 5. Proprietary color illumination mode enables rendering of true color in transmitted light.

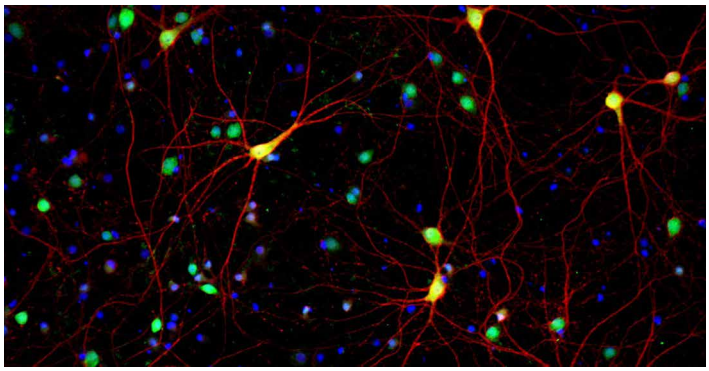


Figure 6. Primary rat cortex neurons (E18) cultured for 28 days in the Gibco™ B-27™ Plus Neuronal Culture System (Cat. No. A3653401) and stained with Invitrogen™ HuC/HuD Monoclonal Antibody (Cat. No. A-21271) (green) and MAP2 Polyclonal Antibody (Cat. No. PA5-17646) (red).

Table 3. EVOS M5000 Imaging System specifications.

Attribute	Details
Optics	Infinity-corrected optical system; RMS-threaded objectives with a 45 mm parfocal distance
Imaging modes	Fluorescence, brightfield, color brightfield, and phase contrast
Illumination	4-position chamber for 4 fluorescent light cubes plus brightfield/phase imaging, or 3 fluorescent light cubes plus brightfield/phase/color imaging; adjustable-intensity LED light cubes have >50,000-hour lifetimes
Imaging methods	Single color; multicolor; time-lapse; Z-stacking
Objective capacity	5-position manual turret
Fluorescence channels	Simultaneously accommodates up to 4 fluorescent light cubes
Condenser	60 mm LWD condenser; 4-position turret with a clear aperture and 3-phase annuli
Stage	Mechanical stage with x- and y-axis fine positioning controls and automated z-axis software controls; interchangeable vessel holders available; proprietary functionality to track stage locations in the EVOS Stage View software
Autofocus	Semi-automated with the ability to save settings
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 µm pixel resolution
Captured images	16-bit RAW monochrome: TIFF, PNG (12-bit dynamic range); 8-bit color: TIFF, PNG, JPG; movies and time-lapse: AVI, WMV
Output ports	4 USB ports; 1 DisplayPort; 1 Ethernet port for direct output to an external USB device, monitor, or network; Wi-Fi connectivity via a USB Wi-Fi dongle
Network capability	Ethernet capability or Wi-Fi dongle
Power supply	12 V AC adapter with country-specific power cord
Dimensions (L x W x H)	46 x 46 x 59 cm (18 x 18 x 23 in.)
Weight	16.5 kg (36.4 lb)
Onboard applications	Cell counting, cell confluency, transfection efficiency, stage-tracking intelligence

Ordering information

Description	Cat. No.
EVOS M5000 Imaging System	AMF5000SV

Learn more at **thermofisher.com/evosm5000**

EVOS M3000 Imaging System

Objectively precise, incredibly easy

The compact, versatile EVOS M3000 Imaging System was designed to be the workhorse of any cell culture laboratory by enabling everyone with the ability to produce reliable, stunning, and high-quality images and videos. It simplifies the cell culture workflow using an innovative pretrained machine-learning model to report confluency measurements in real time. The patent-pending confluency tool reports the confluency percentage seen in the field of view in less than one second without requiring any image capture, effectively eliminating user bias in routine cell culture.

Features:

- **Cell confluency in seconds**—built-in, automated, and real-time image analysis for measuring cell confluency
- **No training required**—simple user interface (UI) with touchscreen display
- **Space-saving design**—smallest EVOS system, with a footprint that fits easily on the lab bench or in a cell culture hood
- **Versatile**—capture images in brightfield, phase contrast, color imaging, and fluorescence
- **Flexible**—compatible with EVOS system objectives (1.25–60x) and light cubes
- **Connectivity**—network-capable instrument facilitates easy data transfer, storage, and collaboration, helping enhance productivity and data management

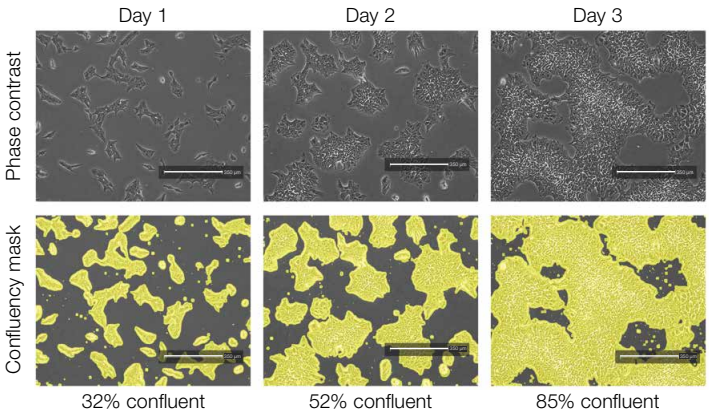
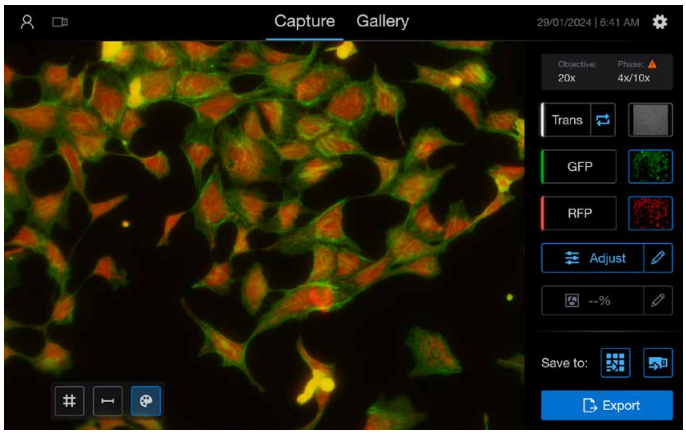


Figure 7. Induced pluripotent stem cells (iPSCs) imaged over time with the EVOS M3000 Imaging System. Human fibroblast-derived iPSCs were cultured on a vitronectin-coated 6-well plate in Gibco™ Essential 8™ Flex Medium (Cat. No. A1517001) for 3 days. Cells were imaged with the EVOS M3000 system under phase-contrast microscopy with and without the automatically generated confluency mask and measurement.



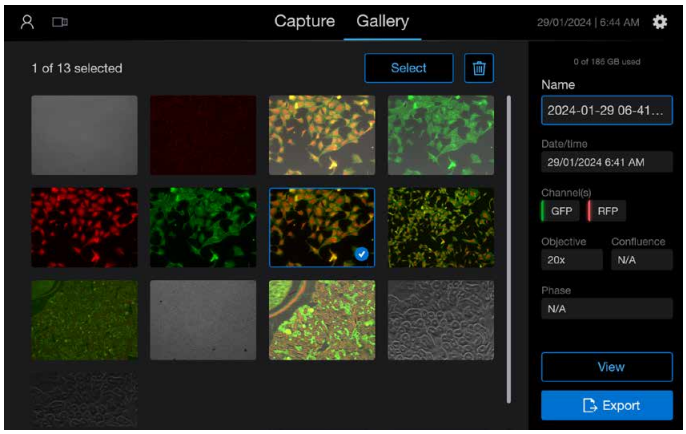


Figure 8. Powerful onboard software with image processing tools built in. The easy-to-use EVOS M3000 Imaging System UI enables you to easily capture images in transmitted light or fluorescence **(left)** and explore saved images with the image gallery **(right)**.

Table 4. EVOS M3000 Imaging System specifications.

Attribute	Details
Optics	Infinity-corrected optical system; RMS-threaded objectives with a 45 mm parfocal distance
Imaging modes	2-color fluorescence, transmitted light, and color imaging modes
Illumination	2-position chamber for 2 fluorescent light cubes; adjustable-intensity LED light cubes have >50,000-hour lifetimes
Imaging methods	Single color; multicolor; transmitted light movie capture
Objective capacity	4-position manual turret
Fluorescence channels	Simultaneously accommodates up to 2 interchangeable fluorescent light cubes
Condenser	76 mm long working distance condenser, 4-position turret with a clear aperture and 3-phase annuli
Stage	Fixed X–Y stage with stage size of 179 x 229 mm; optional mechanical stage with travel range of 127 x 76 mm
Display	10.1-inch high-resolution LCD touchscreen display (1,920 x 1,200-pixel resolution)
Camera	High-sensitivity color CMOS camera (2,064 x 1,536-pixel resolution, 3.2 megapixels) with 3.45 µm pixel resolution
Captured images	8-bit OME-TIFF, PNG, and JPG images; brightfield movies (MP4)
Video capture	Up to 5 minutes of continuous, real-time, transmitted-light video capture
Output ports	1 USB 3.0, 2 USB 2.0, 1 DisplayPort
Networking capability	Ethernet capability via USB-to-Ethernet adapter, or Wi-Fi dongle
Power supply	12 V AC adapter with country-specific power cord
Dimensions (L x W x H)	48.6 x 29.6 x 32.3 cm (19.1 x 11.7 x 12.7 in.)
Weight	8.3 kg (18.4 lb)
Onboard applications	Real-time cell confluency, contrast adjustment

Ordering information

Description	Cat. No.
EVOS M3000 Imaging System	AMF3000
EVOS Objective Starter Kit for Brightfield/Phase (includes 4x, 10x, and 20x achromat, long working distance, phase-contrast objectives)	AMEP5009
EVOS Objective Starter Kit for Fluorescence/Brightfield/Phase (includes 4x, 10x, and 20x fluorite, long working distance, phase-contrast objectives)	AMEP5010
EVOS M3000 Mechanical Stage	AMEP5011
EVOS Light Cube Starter Kit, GFP, Texas Red	AMEP5015
EVOS Light Cube Starter Kit, DAPI, GFP, Texas Red	AMEP5016
EVOS Light Cube Starter Kit, DAPI, GFP	AMEP5018

Learn more at **thermofisher.com/evosm3000**

EVOS Onstage Incubator

All-in-one solution for time-lapse imaging

The Invitrogen™ EVOS™ Onstage Incubator (OSI-2) can be paired with the EVOS M7000 or M5000 imaging systems for long-term monitoring of cell cultures and time-lapse imaging at high resolution. The environmental chamber enables precise control over temperature, humidity, and CO_2 levels for incubating cells under physiological and nonphysiological conditions over long periods of time, making it excellent for demanding live-cell imaging experiments including hypoxia and neurite outgrowth studies. Nitrogen control can also be used to modulate oxygen levels for hypoxia studies.

Features:

- **Intuitive UI**—simplifies experiment setup and monitoring of experimental conditions and enables adjustments while experiments are running
- **Compact**—small footprint and sleek design saves lab space
- **Onboard air compressor**—eliminates need for separate air tank; quiet at 42 dB

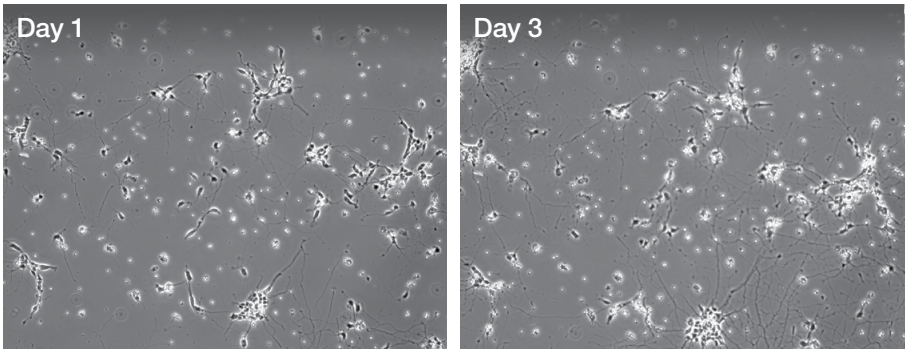


Figure 9. Time-lapse imaging of neurite outgrowth from neurons over several days using an EVOS M7000 Imaging System equipped with an EVOS OSI-2. Rat hippocampal neurons were plated on Gibco™ Poly-D-Lysine (Cat. No. A38904)–coated plates in Gibco™ Neurobasal™ Plus Medium (Cat. No. A3582901) with B-27™ Plus Supplement (Cat. No. A3582801) and were incubated in an EVOS OSI-2 (Cat. No. AMC2000) with 5% CO_2 at 37°C and 80% humidity. The cells were imaged every 15 minutes for 72 hours with an EVOS M7000 Imaging System (Cat. No. AMF7000) equipped with a 20x objective (Cat. No. AMEP4734).

Table 5. EVOS Onstage Incubator (OSI-2) specifications.

Attribute	Details
Compatible vessels	Multiwell plates; 35, 60, and 100 mm Petri dishes; T-25 flasks; chamber slides
Temperature range	30–40°C
CO_2 range	0–20%
O_2 range	0% to ambient
Humidity range	70–90% relative humidity at 37–40°C
Dimensions (H x D x W)	27 x 17 x 4.1 cm (environmental chamber); 42 x 21 x 23 cm (control unit)
Weight	0.73 kg (environmental chamber); 6.7 kg (control unit)
Compatible instruments	EVOS M5000 and EVOS M7000 imaging systems

Ordering information

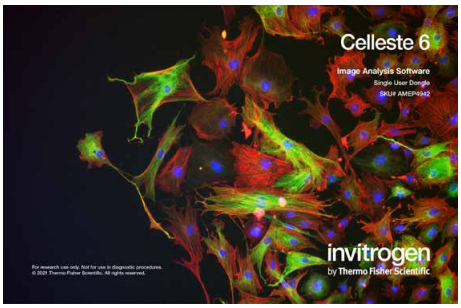
Description	Cat. No.
EVOS Onstage Incubator	AMC2000

Learn more at **thermofisher.com/evososi**

Celleste Image Analysis Software

An image-centric analysis solution

Invitrogen™ Celleste™ 6 Image Analysis Software offers broad functionality and point-and-click simplicity. Designed for usability and flexibility, it provides powerful tools for cell counting and sizing as well as classification, segmentation, and analysis of complex images. The multichannel analysis (MCA) protocols of Celleste 6 software use preconfigured templates with machine-learning algorithms and a wizard-based workflow to help simplify batch analysis.



Features:

- **Simple**—preconfigured and optimized analysis templates help derive the most relevant results from image sets
- **Flexible**—optional modules for 2D and 3D deconvolution, 3D rendering, visualization, and 3D analysis allow users to choose capabilities relevant for their cell models and analysis needs
- **Intuitive**—icon-based, wizard-driven workflow helps streamline image analysis and eliminate guesswork

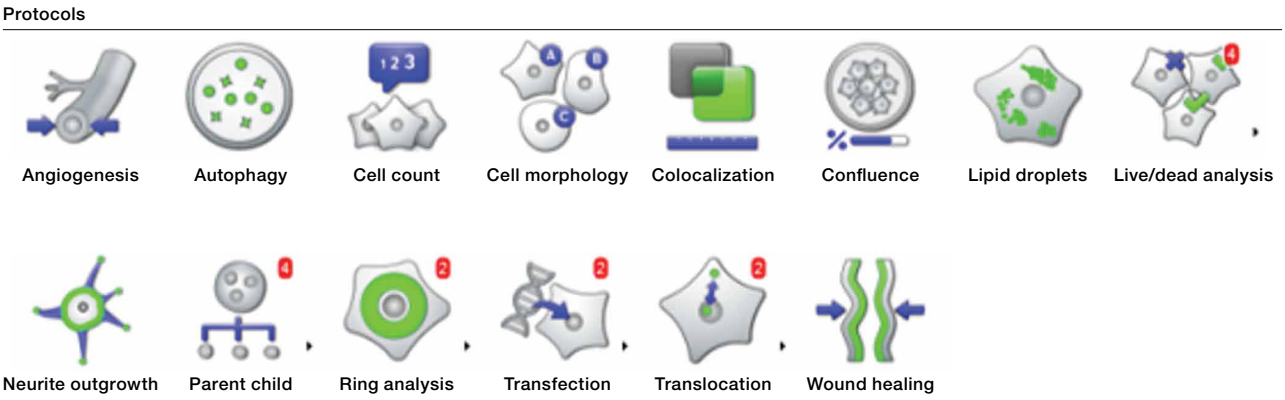
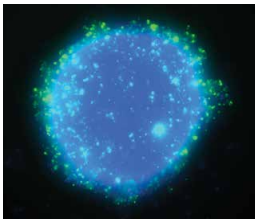
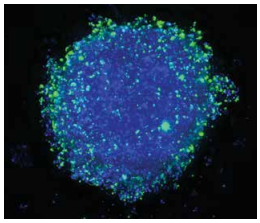


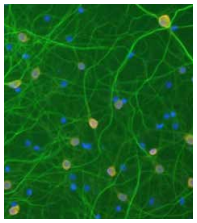
Figure 10. Celleste 6 software MCA templates for common applications to simplify batch analysis.

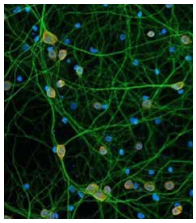
Table 6. Celleste Image Analysis Software highlights.

Celleste software	Description	Cat. No.
Celleste 6 Image Analysis Software	• Suite of visualization and analysis tools for biological samples • Required for Celleste 2D and 3D software	AMEP4942
Celleste 2D Deconvolution Software	• Improves resolution of 2D images by removing out-of-focus light • Includes GPU acceleration to rapidly deconvolve image sets	AMEP4991
Celleste 3D Deconvolution, Visualization, and Analysis Software	• Improves resolution and reduces out-of-focus haze from 3D images • Includes GPU acceleration to rapidly deconvolve image sets • Includes suite of analysis tools for visualizing and analyzing volumes	AMEP4992


Widefield (3D)


Deconvolved (3D)


Widefield (2D)


Deconvolved (2D)

Learn more at thermofisher.com/celleste

EVOS light cubes

Exceptional fluorescence imaging and illumination

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 across the spectrum. Custom light cubes are also available.

Features:

- Exceptional illumination uniformity across the field of view (FOV)
- Spectral fidelity across channels to help eliminate undesirable bleed-through
- Maximum signal-to-background ratios, even with dim images

Table 7. EVOS light cubes and compatible dyes.

Light cube	Excitation*	Emission*	Compatible dyes**	Cat. No.
DAPI	357/44	447/60	DAPI, Alexa Fluor 350, Hoechst, LysoTracker Blue, NucBlue Dead, NucBlue Live	AMEP4950
TagBFP	390/18	447/60	TagBFP, Alexa Fluor 405, Cascade Blue, Pacific Blue	AMEP4968
CFP	445/45	510/42	CellLight CFP, eCFP, Lucifer Yellow	AMEP4953
GFP	482/25	524/24	Alexa Fluor 488, CellROX Green, CellTracker Green, CyQuant Direct	AMEP4951
YFP	500/24	542/27	eYFP, Acridine Orange plus DNA	AMEP4954
RFP	531/40	593/40	Alexa Fluor 555, RFP, Cy3, pHrodo, MitoTracker Orange CMTMRos, CellMask Orange, CellROX Orange	AMEP4952
Texas Red	585/29	628/32	Alexa Fluor 594, CellTracker Red CMTPX, Texas Red, LysoTracker Red, Live/DEAD Fixable Red	AMEP4955
Cy5	628/40	692/40	Alexa Fluor 647, Cy5, DRAQ5, NucRed Live 647, SYTO 60, TO-PRO-3, MitoTracker Deep Red FM	AMEP4956
Cy5.5	655/40	725/40	Alexa Fluor 680, Cy5.5, ATTO 680	AMEP4973
Cy7	716/40	794/32	Alexa Fluor 750, Cy7, LIVE/DEAD fixable near-IR	AMEP4967
CYP-YFP	445/45	542/27	CFP with control YFP emission	AMEP4969
AO	482/25	488LP	Alexa Fluor 430, Acridine Orange plus DNA or RNA	AMEP4970
Qdot 525–800	445/45	525–800	Qdot 525 through Qdot 800, FM 1-43, FM 4-64	AMEP4966

* In nanometers (nm).

** This is not a complete list of compatible dyes; the SpectraViewer tool (thermofisher.com/spectraviewer) is designed to help optimize light cube and dye compatibility for your EVOS imaging system.

EVOS light cubes and Countess 3 FL instrument

EVOS light cubes are compatible with the two fluorescence channels of the Invitrogen™ Countess™ 3 FL Automated Cell Counter. In addition to counting cells, the Countess 3 FL counter can be used to assess cell viability, apoptosis, transfection efficiency, and fluorescent protein expression.

Learn more at thermofisher.com/evoslightcubes

EVOS vessel holders and stage plates

Designed to hold a wide range of vessels, flasks, plates, dishes, and slides

Invitrogen™ EVOS™ vessel holders allow an excellent fit of your microscope slide, cell culture flask or dish, or microwell plate to the stage of the EVOS imaging systems for increased precision in sample alignment. The numerous vessel holder options are specifically designed to fit various brands of plates, flasks, and dishes, helping ensure that your preferred brand is accommodated.

With over 50 vessel holders and stage plates to choose from, our convenient selection guide and online selection tool help make it easy to find the right holder or stage plate for your EVOS microscope, vessel, and application—including vessel holders optimized for the Stage View feature of EVOS M5000 systems and for performing time-lapse imaging with the EVOS Onstage Incubator. For convenience, we offer the Invitrogen™ EVOS™ Vessel Holders Pack that provides 10 of our most popular EVOS vessel holders (Cat. No. AMEP4619).

Table 8. EVOS vessel holders optimized for the Stage View feature and OSI-2.

Vessel	Retention clip	Stage View map	OSI-2 compatible	Cat. No.
One 75 mm x 25 mm glass slide; extra clearance for oil objectives	Yes	Yes	No	AMEPVH044
One 75 mm x 25 mm glass slide	Yes	No	Yes	AMEPVH058
One Nunc Lab-Tek coverglass chamber slide	Yes	No	Yes	AMEPVH055
One Nunc Lab-Tek II chambered coverglass	Yes	No	Yes	AMEPVH039
One Nunc 35 mm dish	Yes	No	Yes	AMEPVH029
One 128.2 mm x 86.2 mm multiwell plate	Yes	Yes	Yes	AMEPVH028
One Nunc multiwell dish	Yes	Yes	Yes	AMEPVH040
One 128.2 mm x 86.2 mm multiwell plate	Yes	Yes	No	AMEPVH022
One Nunc multiwell dish with retention clip	Yes	Yes	No	AMEPVH061

If we do not have a vessel holder for your specialized plate, slides, culture dishes, or flasks, custom vessel holders are available. Contact us to create a specialty vessel holder for your EVOS imaging system.

For a complete list of vessel holders, visit **thermofisher.com/evosvesselholders**

EVOS objectives

Outstanding optical performance from visible light to near-infrared light

All Invitrogen™ EVOS™ objectives offer outstanding optical performance from visible light to near-infrared light. Choose from more than 40 high-performance objective lenses ranging from 1.25x to 100x. Long working distance (LWD) objectives are optimized for vessels with a nominal wall thickness of 0.9–1.5 mm, such as slides, cell culture dishes and flasks, and microtiter plates. For applications using #1.5 coverslips (approximately 0.17 mm thick), coverslip-corrected (CC) objectives have a higher magnification-to-numerical aperture ratio and provide higher resolution than LWD objectives.

Objective type	Achromat	Fluorite	Semi-apochromat	Apochromat
Recommended applications	Designed for general applications. Color and focus have standard correction compared to apochromat and fluorite objectives.	Designed for fluorescence and demanding transmitted-light applications. They provide excellent resolution, resulting in bright fluorescence signals and high-contrast imaging.	Designed for all fluorescence applications, with only slightly lower image quality than apochromat objectives. They are a more affordable alternative to apochromat while still delivering excellent image quality compared to most other fluorite objectives.	Designed for the most demanding applications, especially capturing color images in white light. They provide exceptional resolution, fluorescence brightness, contrast, and chromatic correction compared to achromat and fluorite objectives.
Color/brightfield	Yes			
Coverslip	No	Yes		
Plastic	Yes*		Lower magnification only	
Fluorescence	No	Yes, good image quality	Yes, better image quality	Yes, best image quality

* While possible with specialty plastics, Apochromat is traditionally used with glass coverslip samples due to working distance and image quality limitations.

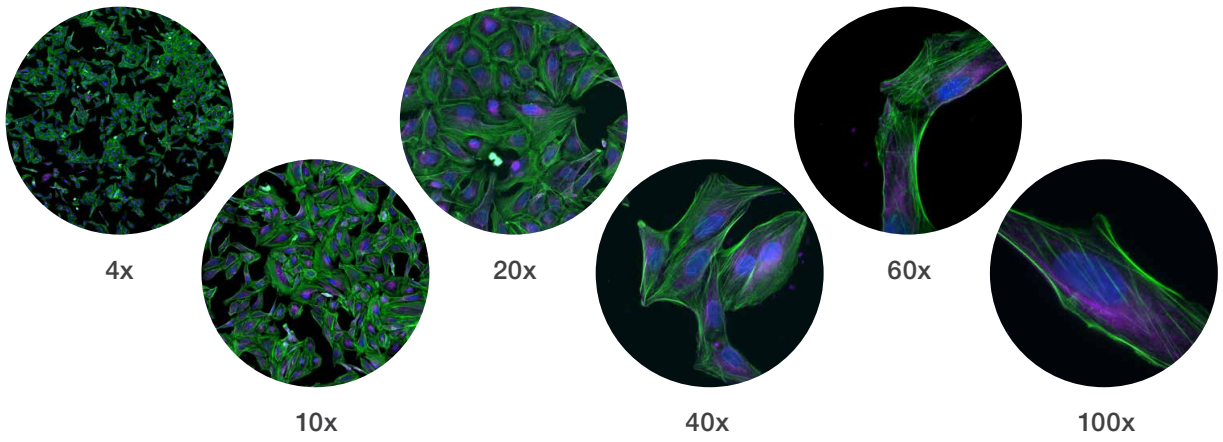


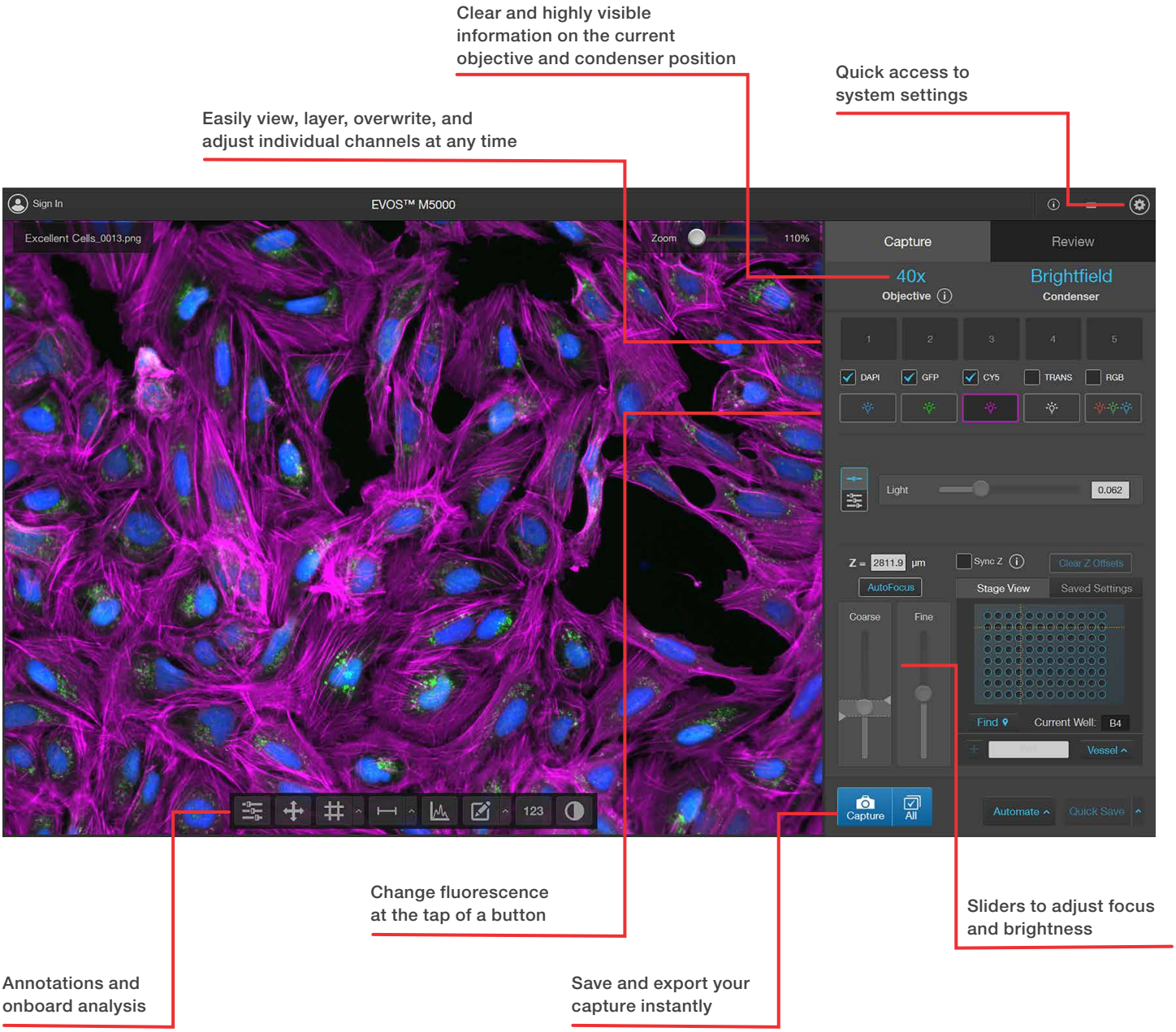
Figure 11. U2OS cells with stained nuclei (blue, DAPI), actin (green, Alexa Fluor 488 dye), and alpha-tubulin (purple, Cy5 dye) were imaged with an EVOS M7000 Imaging System equipped with EVOS light cubes and objectives ranging from 4x to 100x.

Learn more at **thermofisher.com/evosobjectives**

EVOS system user interface

All EVOS instruments—from the EVOS M3000 system up to the EVOS M7000 system—share many characteristics that make them easy to learn and operate. After spending very little time with one system, users can switch to another, with the change designed to be as seamless as possible.

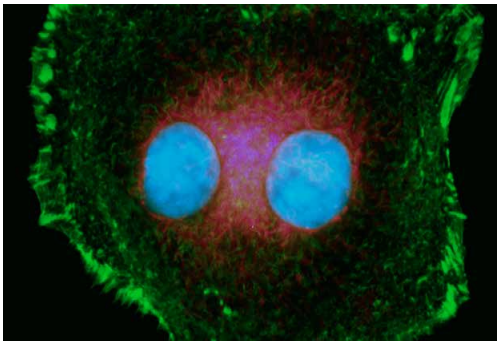
Increasing the number of features doesn't need to mean increasing the amount of complexity. For every application—from cell culture to high-throughput experimental analysis—EVOS systems are designed with the user in mind, helping make even the most complicated workflows simple to perform. This is the EVOS system experience.



Mounting media and antifades

Prevent fluorescence photobleaching and maximize refractive index

Loss of fluorescence through irreversible photobleaching processes leads to a significant reduction in sensitivity, particularly when target molecules are of low abundance. Invitrogen™ ProLong™ and SlowFade™ glass reagents are designed to provide excellent photobleach protection across the visible and near-infrared spectra. They have a refractive index (RI) of 1.52, similar to glass coverslips, and are compatible with immersion oil and oil-immersion microscope optics to enable exceptional resolution and sensitivity.



Key benefits of antifade mountants for fixed cells:

- Up to 3 times improvement in axial resolution at 150 µm focal depth
- Up to 4 times more imageable focal depth (500 µm) compared to mountants with 1.47 RI
- Ready-to-use benchtop formulations with or without nuclear counterstain

Key benefits of antifade mountants for live cells:

- Compatible with fluorescent dyes and proteins across the spectrum
- Extends imaging times in time-lapse experiments
- Minimal effect on cell viability or proliferation using protocol
- Ready-to-use formulation

Table 9. ProLong and SlowFade mountants.*

Mountant	Preparation	Includes counterstain	RI	3D compatible	Cat. No.
ProLong Glass Antifade Mountant	Hard setting	No	1.52	Yes	P36980
ProLong Glass Antifade Mountant with NucBlue Stain	Hard setting	Yes	1.52	Yes	P36981
SlowFade Glass Soft-Set Antifade Mountant	Soft setting	No	1.52	Yes	S36917-5X2ML
SlowFade Glass Soft-Set Antifade Mountant, with DAPI	Soft setting	Yes	1.52	Yes	S36920-5X2ML
ProLong Live Antifade Reagent	Live cell	No	N/A	Yes	P36974

* This is not a complete list of mountants and antifades.

Learn more at thermofisher.com/prolong and thermofisher.com/slowfade

Improve 3D cell imaging results with clearing and delipidation reagents

Invitrogen™ CytoVista™ clearing reagents enable rapid and efficient clearing of thick tissue samples, with 1 mm samples cleared in as little as 2 hours and whole mouse brains cleared in just 24 hours. The gentle optical clearing process helps ensure minimal impact on detection sensitivity and sample morphology, maintaining fluorescent labeling for 3D imaging. These reagents are compatible with standard immunohistochemistry (IHC) workflows and most fluorescence imaging instruments, requiring no additional equipment. Additionally, they offer flexibility for long-term storage with minimal impact on sample integrity and, since the clearing effect can be reversed, samples can be used for further histology studies.

Table 10. CytoVista clearing reagents.

Reagent	For use with	RI	Sample thickness	Cat. No.
CytoVista 3D Cell Culture Clearing/Staining Kit	Tumoroids, organoids, spheroids	1.48	Up to 1,000 µm (1 mm)	V11325
CytoVista Tissue Clearing/Staining Kit	Tissue	1.53	Up to 10 mm	V11324

Learn more at thermofisher.com/cytovista

Culture and image with confidence

The clear choice for high-quality imaging applications

Better cultures lead to better performance, and the convenience of purchasing from among the best products in one place can help save time, energy, and money. Trusted Gibco™, Invitrogen™, and Thermo Scientific™ Nunc™ products are optimized and evaluated to help you achieve improved productivity.

Media, FBS (sera), and imaging cultureware for imaging systems are validated together to help ensure you have the confidence to culture your cells with Thermo Fisher Scientific.

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Nunc imaging cultureware

Nunc cell culture imaging products offer comprehensive solutions with flexibility and consistency to help meet your needs in cell imaging applications, including fluorescence microscopy, phase-contrast microscopy, confocal microscopy, live-cell imaging, differential interference contrast (DIC) microscopy, and fluorescence *in situ* hybridization (FISH).

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Thermo Scientific™ Nunc™ Lab-Tek™ II Chamber Slide System
Available in RS or CC2 glass—removable chambers allow you to seed, incubate, fix, and stain on a single slide

Thermo Scientific™ Nunc™ Lab-Tek™ II Chambered Coverglass
Chambers mounted to coverglass (#1.5 borosilicate glass) for high-magnification microscopy and confocal and live imaging

Thermo Scientific™ Nunc™ MicroWell™ 96-Well Microplates
Clear plates with surface options: non-treated, or coated with Thermo Scientific™ Nunclon™ Delta surface, collagen I, or poly-D-lysine

Thermo Scientific™ Nunc™ F96 MicroWell™ Polystyrene Plates
Black or white plates with 50–250 µL working volume range; choice of Nunclon Delta surface

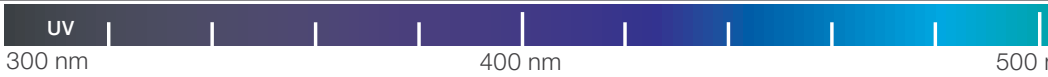
Thermo Scientific™ Nunc™ Lab-Tek™ Chamber Slide System
Available in glass or Permanox™ plastic—removable chambers allow you to seed, incubate, fix, and stain on a single slide

Thermo Scientific™ Nunc™ Glass Bottom Dishes
For fluorescence, phase-contrast, confocal, and live-cell imaging

Thermo Scientific™ Nunc™ Optical Bottom Plates
96- and 384-well optical-bottom plates, with either a thin polymer film bottom or a #1.5 borosilicate glass coverslip bottom

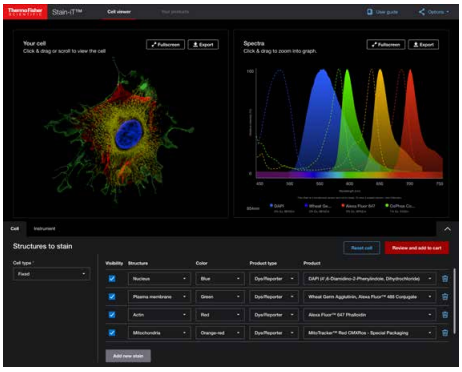
Table 11. Fluorophore selection guide.

	Invitrogen™ EVOS™ DAPI Light Cube Excitation: 357/44 nm Emission: 447/60 nm	Invitrogen™ EVOS™ GFP Light Cube Excitation: 470/22 nm Emission: 510/42 nm
Antibody internalization		pHrodo Green iFL antibody labeling reagents
Apoptosis		CellEvent Caspase-3/7 Green Detection Reagent Click-iT Plus TUNEL Green Assay
Autophagy		Premo Autophagy Sensors (p62 and LC3B) GFP
Cell tracking	CellTracker Blue NeuroTrace Blue Nissl Stain Calcein Blue AM	CellTracker Green NeuroTrace Green Nissl Stain Calcein AM
Cytoskeleton (actin)	Alexa Fluor phalloidins	CellMask Green Actin Tracking Stain Alexa Fluor phalloidins
Cytoskeleton (tubulin)		Tubulin Tracker Green CellLight Tubulin-GFP
Endosomes/endocytosis	Alexa Fluor dextrans	pHrodo and Alexa Fluor dextrans, bioparticles, and LDL BODIPY FL LDL CellLight early and late endosomes
Endoplasmic reticulum	ER-Tracker Blue-White DPX	ER-Tracker Green
Hypoxia		Image-iT Green Hypoxia Reagent
Calcium	Fura-2 Indo-1	Fluo-4 Oregon Green BAPTA-1 Fluo-3 Calcium Green Fluo-5F
Lysosomes	LysoTracker and LysoSensor Blue	LysoTracker and LysoSensor Green
Mitochondrial structure		MitoTracker Green CellLight Mitochondria-GFP
Mitochondrial function		MitoSOX Superoxide Green HCS Mitochondrial Health Kit Image-iT Lipid Peroxidation Kit Click-iT Lipid Peroxidation Kit
Nucleus	HCS NuclearMask Blue DAPI Hoechst 33342 NucBlue ReadyProbes SYTO Blue SYTOX Blue	SYTO 9 SYTOX Green YO-PRO-1 YOYO-1 Click-iT EdU CellLight Nucleus-GFP CellLight Histone 2B-GFP NucGreen ReadyProbes
Plasma membrane	Wheat Germ Agglutinin (WGA)	CellMask Green BODIPY 493/503 WGA FluoVolt Membrane Potential CellLight Plasma Membrane-GFP
Reactive oxygen species/oxidative stress	ThiolTracker Violet	CellROX Green Reagent H_2DCFDA dyes Singlet Oxygen Sensor Green Dihydrorhodamine 123 DAF-FM Nitric Oxide APF Radical Sensor Image-iT LIVE Green ROS Kit Premo Hydrogen Peroxide Sensor
Phagocytosis		pHrodo Green BioParticles Alexa Fluor Zymosan A BioParticles Premo Autophagy Assays NBD-PE
Viability	Calcein Blue AM SYTOX Blue	Calcein AM, cell-permeant dye SYTOX Green Nucleic Acid Stain LIVE/DEAD Viability/Cytotoxicity assay kits NucGreen Dead 488 ReadyProbes Reagent YOYO-1 Iodide Image-iT DEAD Green Viability Stain HCS LIVE/DEAD Green Kit
Fluorescent protein–based cell structure reagents		CellLight GFP BacMam 2.0
Senescence		CellEvent Senescence Green Detection Kit



Invitrogen™ EVOS™ RFP Light Cube Excitation: 531/40 nm Emission: 593/40 nm	Invitrogen™ EVOS™ Red Light Cube Excitation: 585/29 nm Emission: 624/40 nm	Invitrogen™ EVOS™ Cy5 Light Cube Excitation: 628/40 nm Emission: 693/40 nm
pHrodo Red iFL antibody labeling reagents		pHrodo Deep Red antibody labeling reagents LysoLight Deep Red labeling kits and reagents
	CellEvent Caspase-3/7 Red Detection Reagent Click-iT Plus TUNEL Red Assay	Click-iT Plus TUNEL Far Red Assay
Premo Autophagy Sensors (p62 and LC3B) RFP		
CellTracker Orange NeuroTrace Red Nissl Stain	CellTracker Red	CellTracker Deep Red NeuroTrace Deep-Red Nissl Stain
CellMask Orange Actin Tracking Stain Alexa Fluor phalloidins	Alexa Fluor phalloidins	CellMask Deep Red Actin Tracking Stain Alexa Fluor phalloidins
CellLight Tubulin-RFP		Tubulin Tracker Deep Red
Alexa Fluor dextrans and bioparticles DiI LDL	pHrodo and Alexa Fluor dextrans, bioparticles, and LDL CellLight early and late endosomes	Alexa Fluor dextrans
	ER-Tracker Red	
Image-iT Red Hypoxia Reagent		
Rhod-3 X-Rhod-1	Rhod-2 Fura Red	
	LysoTracker and LysoSensor Red	LysoTracker and LysoSensor Deep Red LysoLight Deep Red labeling kits and reagents
MitoTracker Orange CellLight Mitochondria-RFP	MitoTracker Red	MitoTracker Deep Red
MitoSOX Superoxide Red JC-1 Membrane Potential Image-iT TMRM TMRE Image-iT Lipid Peroxidation Kit		
Click-iT EdU CellLight Nucleus-RFP SYTO 14 SYTOX Orange Propidium Iodide ReadyProbes	HCS NuclearMask Red SYTO 59 Red SYTOX Red Click-iT EdU	HCS NuclearMask Deep Red NucRed 647 ReadyProbes SYTO Deep Red SYTOX Deep Red TO-PRO-3 TOTO-3 DRAQ5 Click-iT EdU
CellMask Orange WGA	WGA	CellMask Deep Red WGA BODIPY 665/676
CellROX Orange Reagent Dihydroethidium (hydroethidine)		CellROX Deep Red Reagent
pHrodo Red BioParticles Conjugates Premo Autophagy Assays Alexa Fluor Zymosan A BioParticles	Alexa Fluor Zymosan A BioParticles	pHrodo Deep Red BioParticles Conjugates LysoLight Deep Red labeling kits and reagents
SYTOX Orange Nucleic Acid Stain	SYTOX Red LIVE/DEAD Viability/Cytotoxicity Kits (Green/Red) YOYO-3 Iodide	SYTOX Deep Red Nucleic Acid Stain LIVE/DEAD Viability/Cytotoxicity Assay Kit (Green/Deep Red)
CellLight RFP BacMam 2.0		

Educational resources



Invitrogen™ Stain-iT™ Cell Staining Simulator

Visualize cell staining without wasting reagents, antibodies, or time while generating quality results.

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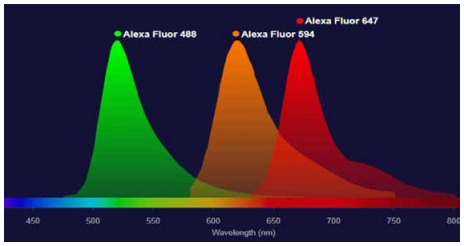

SpectraViewer tool

Easily compare excitation and emission spectra of fluorophores and reagents and assess instrument compatibility.

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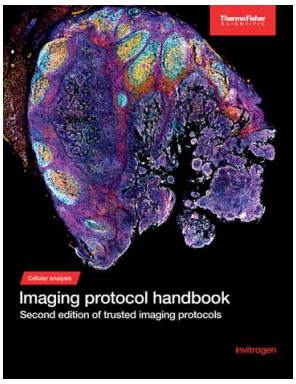

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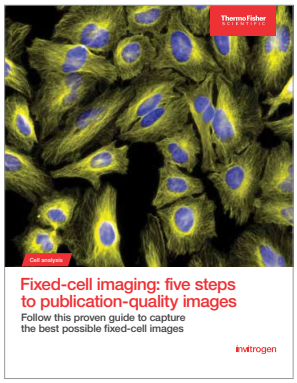

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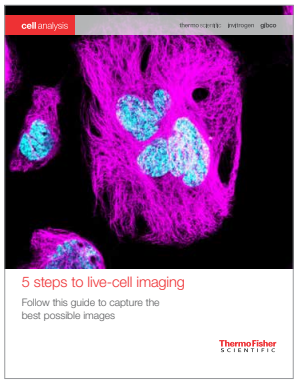

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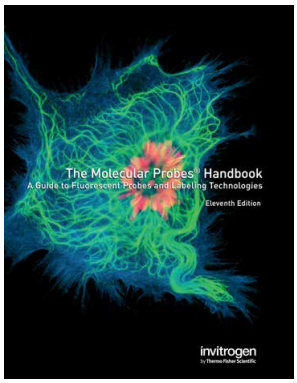

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