

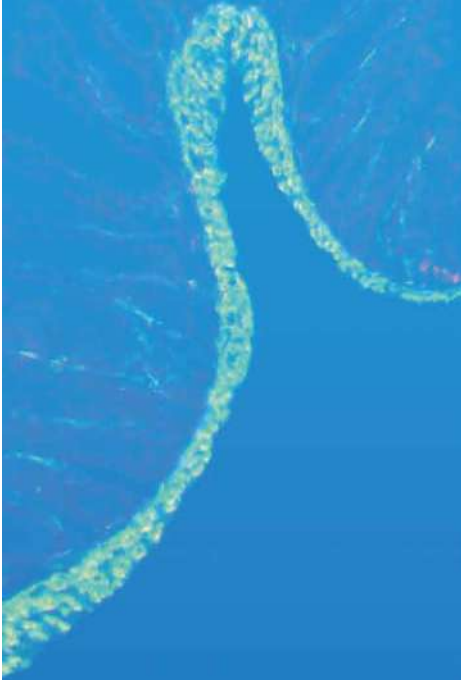
# CELENA<sup>®</sup> S

DIGITAL IMAGING SYSTEM



Capture brilliance with  
the ultimate all-in-one imaging system





## Highlights

- All-in-one system for your benchtop
- High quality precision optics
- Advanced LED filter cube technology
- Sensitive scientific-grade CMOS sensor
- 128 GB onboard computer
- Sophisticated image analysis software

### The future of imaging is here.

One instrument for imaging and data analysis. One instrument to replace the complex setup of traditional fluorescence microscopes, extensive imaging equipment, computers, and image analysis software. Small, powerful, and easy to use, the CELENA® S Digital Imaging System makes capturing publication-quality fluorescence, brightfield, and phase contrast images a breeze.

User-friendly software accommodates a wide range of imaging applications such as image capture, analysis, live cell imaging, Z-stack imaging, and even automated cell counting.



### Exquisite images and powerful data analysis with the CELENA® S

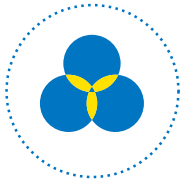
The CELENA® S is an all-in-one digital imaging system for your benchtop, equipped with advanced precision optics, a highly sensitive scientific grade CMOS sensor, digitally controlled LED light sources with hard-coated fluorescence filters, and a computer with image analysis software. Interchangeable objectives, filter cubes, and vessel holders accommodate a wide range of imaging needs. An onstage incubation system gives precise control over temperature, humidity, and gases for live cell monitoring. Remarkably sophisticated yet simple software makes it easy to acquire and analyze multicolor fluorescence, brightfield, Z-stack, and time lapse images as well as monitor cell growth, concentration, and viability.

### New! Onstage incubation system

Composed of an environmental chamber, temperature controller, and a gas mixer, the new onstage incubation system supports various live cell imaging applications. Researchers can control the temperature, humidity, and gas content with precision. Live cells can be monitored with the time lapse function or the growth monitor on the CELENA® S.

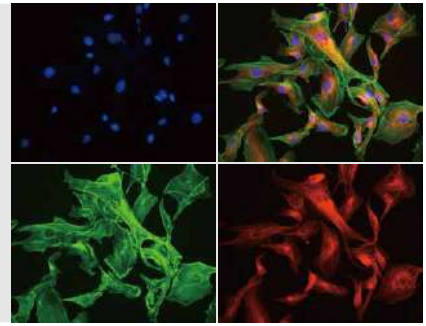


# Key software features



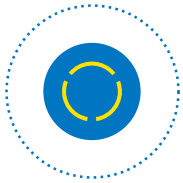
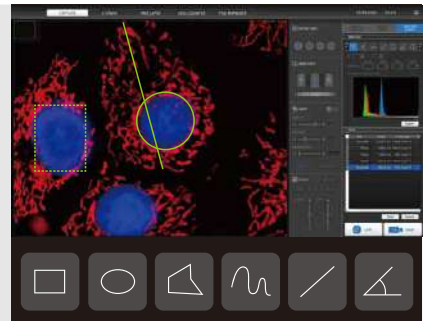
## Multicolor fluorescence and brightfield imaging

Capture, overlay, edit, and save multichannel fluorescence images with the simple user interface. Stellar optics and adjustable transmitted light allow for high quality brightfield and phase contrast imaging.



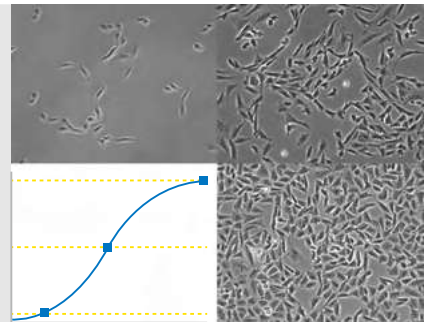
## Onboard data analysis

Choose from a variety of measurement and annotation tools to analyze your images immediately upon capture. Export data and annotated images easily via USB.



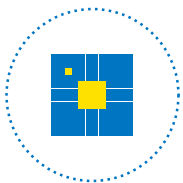
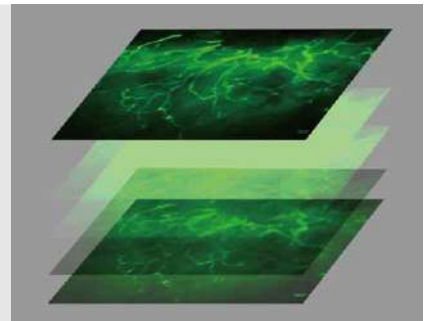
## Live cell monitoring

Monitor live cells with the time lapse function or the growth monitor. Set up the onstage incubator to control the temperature, humidity, and  $\text{CO}_2/\text{O}_2$  levels for your cells.



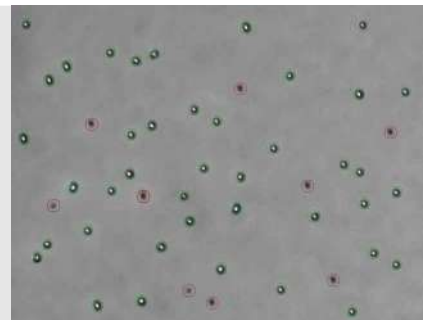
## Z-stack imaging

Capture multiple images along the Z-axis with the Z-stack function.



## Automated cell count and viability analysis

Check cell concentration and viability with the onboard automated cell counter. Count data and images can be stored onboard or exported via USB.



# LED fluorescence

CELENA® S LED filter cubes combine LEDs and optical filters for precise control over powerful and uniform illumination. LEDs have an exceptionally long lifetime, do not generate excessive heat, and can be turned on and off instantly without consequence. The hard-coated optical filters provide high transmission efficiencies, making the CELENA® S highly sensitive to even the faintest of fluorescence signals. The interchangeable CELENA® S LED filter cubes allow for diverse and robust fluorescence imaging applications.

Sensitive fluorescence detection – *hard-coated filters and a short light path*

Precise control for consistent illumination – *adjustable intensity, gain, and exposure*

Low maintenance costs – *LED lifetime of 50,000+ hours*

Energy-efficient – *does not generate excessive heat, no warm-up or cool-down time required*

Interchangeable – *12+ LED filter cubes, custom configurations available*



Cat #	LED Filter Cube	Ex (nm)	Em (nm)
I10101	DAPI	375/28	460/50
I10102	EGFP	470/30	530/50
I10103	RFP	530/40	605/55
I10104	mCherry	580/25	645/75
I10105	ECFP	436/20	480/40
I10106	EYFP	500/20	535/30
I10107	DSRed	530/40	620/60
I10108	Cy5	620/60	700/75
I10109	Cy7	710/75	810/90
I10110	Cy3/TRITC Long Pass	530/40	570lp
I10111	GFP Long Pass	470/40	500lp
I10112	Cy5 Long Pass	620/60	665lp
I10113	Custom Filters	-	-

# Outstanding optics, outstanding image quality

The CELENA® S has a wide selection of high precision optics for high-resolution, publication-quality images. The objectives accommodate different types of sample vessels for various imaging applications.



## Plan Achromatic Objectives

Objectives for routine brightfield, phase contrast, and fluorescence imaging with most cell culture vessels. Standard correction for color, focus, and optical aberrations

Cat #	Objective	NA	WD (mm)	Brightfield	Phase Contrast	LWD*	Coverslip correction (mm)	Immersion
I10001	TC PlanAchrom 4X Ph	0.13	17.3	O	O	O	-	-
I10002	TC PlanAchrom 10X Ph	0.25	7.6	O	O	O	-	-
I10003	TC PlanAchrom 20X Ph	0.4	7.0	O	O	O	-	-
I10004	TC PlanAchrom 40X Ph	0.65	2.8	O	O	O	-	-

## Plan Fluorite Objectives

Objectives for sensitive fluorescence imaging and higher resolution brightfield imaging. Higher level of correction for color, focus, and optical aberrations.

Cat #	Objective	NA	WD (mm)	Brightfield	Phase Contrast	LWD*	Coverslip correction (mm)	Immersion
I10005	TC PlanFluor 4X	0.13	17.5	O	-	O	-	-
I10006	TC PlanFluor 10X	0.3	7.5	O	-	O	-	-
I10007	TC PlanFluor 20X	0.4	7.5	O	-	O	-	-
I10008	TC PlanFluor 40X	0.6	2.9	O	-	O	-	-

## Plan Apochromatic Objectives

Objectives for the highest resolution and most sensitive fluorescence imaging. Highest level of correction for color, focus, and optical aberrations.

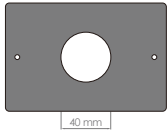
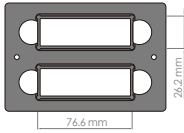
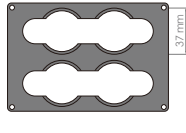
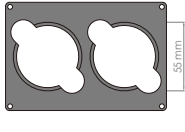
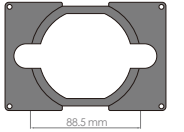
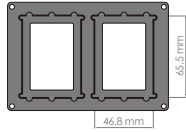
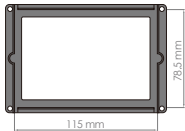
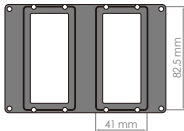
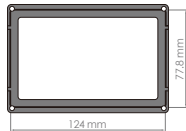
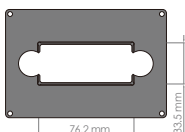
Cat #	Objective	NA	WD (mm)	Brightfield	Phase Contrast	LWD*	Coverslip correction (mm)	Immersion
I10013	Plan Apochromat Fluor 1.25X	0.04	3.7	O	-	-	-	-
I10014	Plan Apochromat Fluor 4X	0.13	17.2	O	-	-	-	-
I10009	Plan Apochromat Fluor 10X	0.3	8.6	O	-	-	0.17	-
I10010	Plan Apochromat Fluor 20X	0.65	0.7	O	-	-	0.17	-
I10011	Plan Apochromat Fluor 40X	0.8	0.2	O	-	-	0.17	-
I10015	Plan Apochromat Fluor Oil 40X	0.85	0.2	O	-	-	0.17	Oil
I10012	Plan Apochromat Fluor Oil 100X	1.25	0.19	O	-	-	0.17	Oil

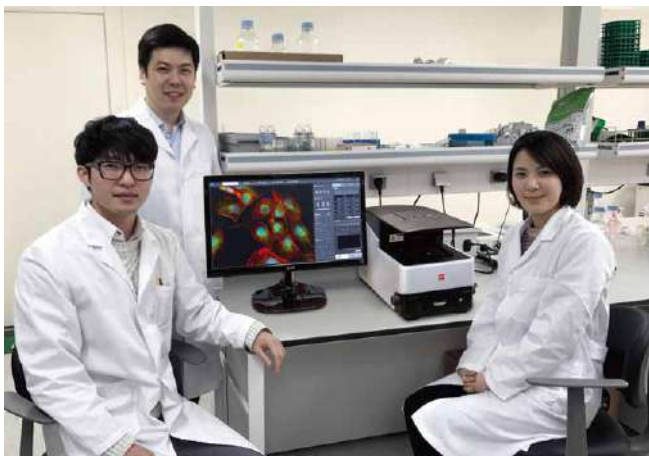
\*LWD = Long working distance; for use with culture vessels with ~1 mm thickness



# Vessel holders

A collection of vessel holders have been to accommodate various flasks, dishes, plates, and slides.

For use with the Vessel Holder Frame [ Cat # I10200 ]		
<p>I10201 Universal Holder</p> 	<p>I10202 25 mm x 75 mm Slide Holder, Two Positions</p> 	<p>I10203 35 mm Cell Culture Dish Holder, Four Positions</p> 
<p>I10204 60 mm Cell Culture Dish Holder, Two Positions</p> 	<p>I10205 100 mm Cell Culture Dish Holder, One Position</p> 	<p>I10206 25 cm<sup>2</sup> Nunc T-25 Flask Holder, Two Positions</p> 
<p>I10207 75 cm<sup>2</sup> Nunc T-75 Flask Holder, One Position</p> 	<p>I10208 25 cm<sup>2</sup> BD/Greiner T-25 Flask Holder, Two Positions</p> 	<p>I10209 75 cm<sup>2</sup> BD/Greiner T-75 Flask Holder, One Position</p> 
<p>I10210 Glass Hemocytometer Holder, One Position</p> 		

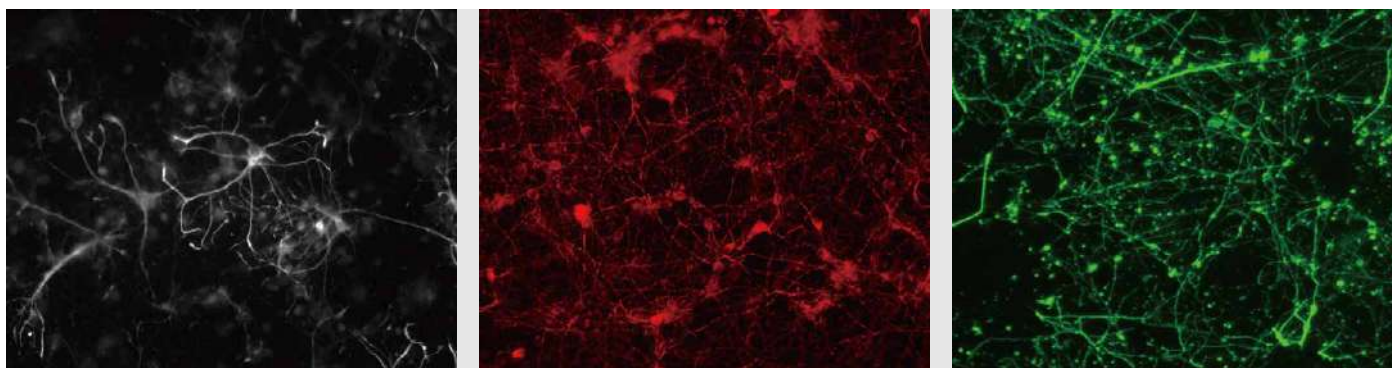


## TESTIMONIAL



“The best thing about the CELENA® S is the image quality. We can use it for quick screening or for data collection and in both cases get sharp, detailed images. The multipurpose nature of the CELENA® S software makes it a great addition to our lab. Our researchers learned to get high quality images in a few minutes, which is great compared to the hours of training and practice it takes to learn on a traditional setup.”

**Jason Lee, CEO**  
AmtixBio Inc



Primary mouse cortical neuron culture labeled for MAP2. Imaged using the TC PlanFluor 20X objective with the CELENA® S.

## CELENA® S Digital Imaging System

Cat #	Objectives	Filter Cubes
CS20001	Custom configurations	Custom configurations
CS20002	TC PlanAchrom 4X Ph TC PlanFluor 10X TC PlanFluor 20X TC PlanFluor 40X	EGFP RFP DAPI

CELENA® S Digital Imaging System Technical Specifications	
Imaging methods	Epifluorescence and transmitted light (brightfield and phase contrast)
Illumination	LED filter cubes with adjustable intensity (>50,000 hr life per filter cube)
Fluorescence channels	3 fluorescence channels and 1 transmitted light channel
Objective turret	5 positions
Objectives	High quality long working distance (LWD) and coverslip-corrected; 1.25X-100X
Condenser	47 mm LWD condenser; 3-positions with brightfield and phase contrast annuli
Computer	Built-in dual core CPU, 128 GB SSD internal storage
Stage	Mechanical X/Y stage, motorized Z stage; accommodates an onstage incubator
LCD display	Full HD color LCD monitor, 1920 x 1080 pixels (not included)
Camera	1.3 MP monochrome CMOS with 1280 x 1024 pixels
Images	8 or 16-bit TIFF, JPG, BMP, or PNG
Dimensions (L x W x H)	44 cm x 30 cm x 27 cm (17.3" x 11.6" x 10.6" )
Weight	20 kg (44 lb)

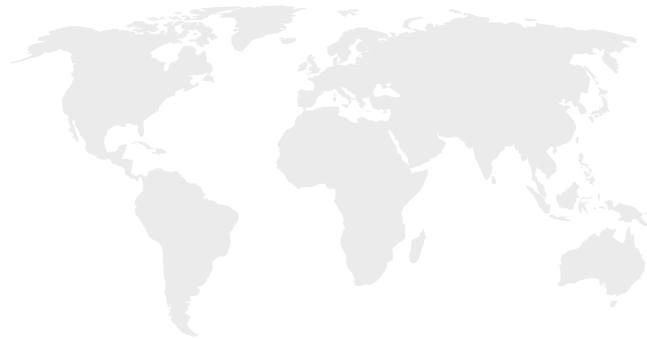
## Onstage Incubation System

Cat #	Product	Contents
I10501	Universal Heating System	- one (1) Temperature Controller - one (1) Heated Plate in Multi-Well Format for 1 Chamber - one (1) Heating Insert - one (1) Heated Lid
I10502	Gas Incubation System for CO <sub>2</sub>	- one (1) CO <sub>2</sub> Gas Mixer - one (1) Humidifying Column - one (1) Air Pressure Generator
I10503	Gas Incubation System for CO <sub>2</sub> /O <sub>2</sub>	- one (1) CO <sub>2</sub> /O <sub>2</sub> Gas Mixer - one (1) Humidifying Column - one (1) Air Pressure Generator
I10510	Heating Insert for Micro Slides	
I10511	Heating Insert for a 35 mm Dish	

Onstage Incubation System Technical Specifications	
Compatible vessels	35 mm dishes, micro slides
Temperature range	Ambient temperature to 55°C
CO <sub>2</sub> range	0.1-20%
O <sub>2</sub> range	0-21%
Humidity range	22-99%
Dimensions (L x W x H)	Heated plate with lid: 15.5 cm x 23.6 cm x 3.0 cm Temperature controller: 23 cm x 17 cm x 9 cm Gas mixer: 23 cm x 17 cm x 9 cm
Weight	Heated plate with lid: 0.4 kg (0.9 lb) Temperature controller: 3.4 kg (7.5 lb) Gas mixer: 2.1 kg (4.6 lb)

# CELENA<sup>®</sup> S

DIGITAL IMAGING SYSTEM



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