

Intuitive Operation. Seamless Workflow.



# Simplified Experiment Design—More Time for Research

Using a mix of imaging programs makes your workflow unnecessarily complicated. cellSens imaging software puts the tools you need for image acquisition, processing, analysis, and sharing in one place.

cellSens software combines ease of use with power and flexibility. Choose the version that best suits your application or upgrade in the future as your needs change.

## cellSens Entry

Suitable for lab workers or researchers who primarily undertake single-shot acquisition, cellSens Entry offers simple layouts that make it easy for you to find the tools you need. For collaboration, Conference Mode maximizes images that appear on the screen when streaming on a wireless network while annotation tools make it easy to highlight areas of interest and work collaboratively with colleagues around the world.

### Additional Modules (Optional)

**Instant Multiple Image Alignment (MIA)** Create **high-resolution, whole-slide images** in real time by moving your microscope's manual stage.

**Encoded Device** Encoded devices (objectives, light intensity, etc.) make it **easy to recall settings**.

**Interactive Measurement** Draw a polyline, rectangle, or circle on top of your image, and obtain **exportable measurement data**.

## cellSens Standard

If your experiments involve fluorescence imaging, cellSens Standard is a cost-effective solution. With all the features of Entry, cellSens Standard adds:

**Image Overlay** Overlay multiple images to **see the whole picture**.

**Object Counting** **Software records object counts** when you click on them.

### Additional Modules (Optional)

**Count and Measure** Define the morphology of an object, and the **software will identify all similar objects** and present segmentation analysis results in a chart.

**Confluency Checker** Determine the confluency of unstained live cells in culture dishes through **quantitative measurements** for reliable data.

## cellSens Dimension

Our most advanced microscope imaging solution, cellSens Dimension includes the basic features of Entry and Standard and adds a functionality for researchers engaged in complex imaging experiments.

With all the features of Entry and Standard, cellSens Dimension adds:

**Graphical Experiment Manager (GEM)** Drag-and-drop UI that makes **organizing complex experiments easier**.

**Basic Image Analysis** **Colocalization and intensity plots over time** are displayed in an easy-to-read chart.

**Macro Manager** Execute **routine processing and analysis with one click**, even for multiple images.

### Additional Modules (Optional)

**Well Plate Navigator** **Scan and acquire images from standard and custom well plates**; navigate to the center of a well with one click.

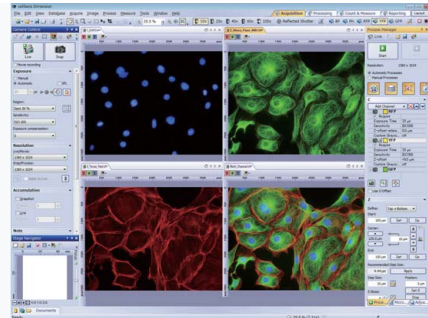
**3D Deconvolution** GPU processing makes **deconvolution fast**. We use popular and custom TruSight deconvolution algorithms to **improve the sharpness, contrast, and dynamic range of reconstructed images**.

**Ratio Analysis** Obtain **ratio measurements** from your images **as they're being acquired**.

**Object Tracking** **Visualize the path an object takes across the field of view**, or track cells as they divide.

Whether you work in a lab or are conducting complex experiments as part of your research, cellSens software can be tailored to your workflow. Having all of the tools you need in one place helps you get results quickly.

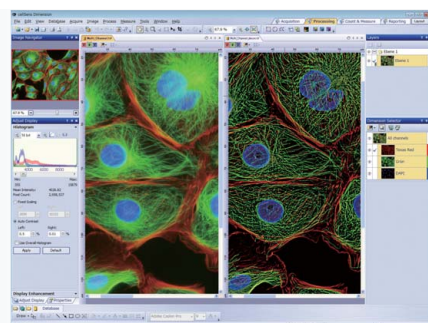
## Image



### Image Capture

It's simple to acquire images in many different ways. Whether you're capturing a single image or imaging in five dimensions (XYZTλ), you can accomplish your work using a single software package. All your camera controls are conveniently grouped in one toolbar.

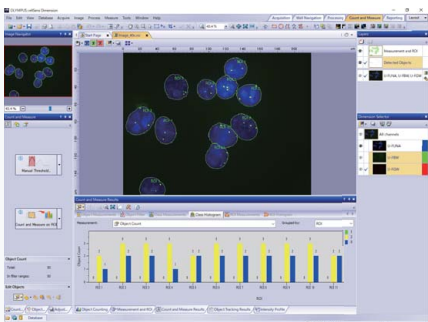
## Process



### Viewing and Processing

Prepare your images for analysis with powerful tools such as deconvolution, background subtraction, flatfield correction, image stitching, spectral unmixing, and various Z-stack displays (including maximum intensity projections).

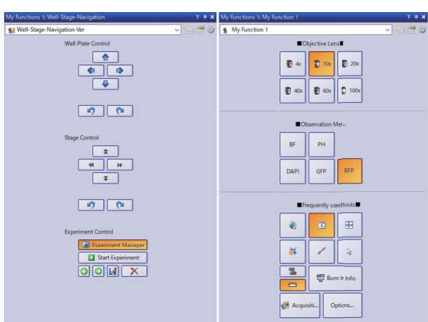
## Analyze



### Measurement and Analysis


Analysis tools enable you to extract data from your images, so you can quantify them for your research. Use the data to generate simple or complex statistics, make confluency measurements, or export to Excel® for further analysis. Whatever you do, the original images remain unaltered, which is important for the integrity of your research.

## Personalization



### Personalization and User Interface

Centered around the needs of demanding experiments, cellSens software is flexible, customizable, and designed to adapt as application requirements evolve.

cellSens Functions		✓ : Included functions /  : Optional solutions			
		DIMENSION	STANDARD	ENTRY	
Layout	User experience customization	✓	✓	✓	
	Overlay multiple images	✓	✓	✓	
View	Document groups for side-by-side image comparison	✓	✓	✓	
	Movie playback	✓	✓	✓	
	Tile view (multiple images in a single data set shown side-by-side)	✓	✓	✓	
	Slice view for orthogonal plane viewing of 3D or time-lapse data sets	✓	✓	✓	
	Voxel viewer for isosurface and volumetric rendering of 3D and 4D data sets	✓	✓	✓	
	Snap/movie acquisition	✓	✓	✓	
	Time-lapse at specified interval	✓	✓	✓	
	Automated multi wavelength	✓	✓	✓	
	Z-stack	✓	✓	✓	
	Multidimensional (XYZT and wavelength)	✓	✓	✓	
	Graphical Experiment Manager	✓	✓	✓	
	Manual panoramic imaging (Instant MIA and Manual MIA)	✓	✓	✓	
Image Acquisition	Multiposition visitation and stage navigator	Multiposition	Multiposition	Multiposition	
	Automated panoramic imaging (auto MIA, requires motorized stage)	Multiposition	Multiposition	Multiposition	
	Instantly create EFI image (manual or motorized Z)	✓	Manual Process	Manual Process	
	Simultaneous multicolor imaging (requires two identical cameras** or image splitter)	✓	Manual Process	Manual Process	
	Live deblurring	✓	✓	✓	
	High dynamic range imaging (HDR)	✓	✓	✓	
	Multowell plate acquisition	Well Plate Navigator	and		
		Multiposition			
Image Processing	Geometry/combine/filter processing	✓	✓	✓	
	Fluorescence unmixing	✓	✓	✓	
	Brightfield unmixing	Count & Measure			
	Deblurring (No/Nearest Neighbor, Wiener Filter)	✓	✓	✓	
	Kymograph	✓	✓	✓	
	2D deconvolution	✓	✓	✓	
	3D deconvolution (constrained iterative deconvolution with GPU processing)	CI Deconvolution			
	Region and line measurements	✓	✓	✓	
	Phase analysis	✓	✓	✓	
	Object analysis and classification	Count & Measure	Count & Measure		
	Interactive measurement	✓	✓	✓	
	Intensity plot over time/z	✓	✓	✓	
	Colocalization	✓	✓	✓	
	Object counting (manual)	✓	✓	✓	
Image Analysis	Object tracking	Tracking	and		
		Count & Measure			
	Online ratio and kinetics	Ratio/FRET			
	Ratio analysis (offline)	✓	✓	✓	
	FRET analysis	Ratio/FRET	or		
		Life Science Analysis			
	FRAP analysis	Photo Manipulation	or		
		Life Science Analysis			
Documentation and Collaboration	Cell count and confluency measurements	✓	Confluency Checker		
	Automatically compose MS Word reports	✓	✓	✓	
	Database image and data management solution for microscopy	Database Core	Database Core	Database Client	
	Open database and load records/documents from database	Database Client	Database Client	Database Client	
Remoting	Remote live image viewing	NetCam	NetCam	NetCam	

\*\*Three points angle, four points angle, arbitrary line, closed polygon, polyline and perpendicular line only. Interactive measurement option is needed to add other measurement tools and make exporting Excel spreadsheets possible.  
 \*\*Supported cameras: iXon3 897, Zyla 5.5 (USB 3.0), Zyla 4.2 (USB 3.0/CamLink), Neo, iXon Ultra 888, ImagEM X2, ORCA-Flash 4.0 (V2/V3), Prime 95B, Prime BSI, Sonar4.2B-11, ORCA-Fusion

## Products with Confirmed Functionality

			DIMENSION	STANDARD	ENTRY
Olympus	Camera	DP21, DP22, DP26, DP27, DP73*, DP74*, DP80**	✓	✓	✓
	Microscope	BX43, BX53, BX63, BX61, BX61WI, IX83, IX73, IX81, SZX16A	✓	✓	✓
	Peripherals	IX81-ZDC, IX81-ZDC2, IX3-ZDC, IX3-ZDC2	✓	✓	✓
	Motorized XY Stage	BX-DSU, IX3-DSU, IX2-DSU, U-CBF	✓	✓	✓
Olympus Soft Imaging Solutions	Camera	BX3-SSU, IX3-SSU	Multiposition	Multiposition	✓
	Peripherals	XM10, XC10, XC30, XC50, UC30, UC50, UC90**, LC20, LC30, SC30, SC50, SC100, SC180	✓	✓	✓
Hamamatsu	Camera	cellTRF (multi-line, single line), MT20, USB-ODB converter, Real Time Controller (U-RTC and U-RTCE), U-FOB, U-STC	✓	✓	✓
	Image Splitter	ORCA R2, ORCA R3, ORCA R5, ORCA ERG, ORCA-Flash 2.8, ImagEM, ImagEMX2, ORCA-Flash 4.0 V2, ORCA-Flash 4.0 V3, ORCA-Flash 4.0 LT, ORCA-Flash 4.0 LT PLUS, ORCA-Fusion	✓	✓	✓
Q-Imaging	Camera	W-View Gemini	✓	✓	✓
		MicroPublisher 3.3 RTV, MicroPublisher 5 RTV	✓	✓	✓
	Camera	Monochrome: EXi Blue/Aqua, QIClick	✓	✓	✓
		Retiga EXi/SRV/2000R/2000RV/4000R/4000RV/6000	✓	✓	✓
Photometrics	Camera	Color : EXi Aqua	✓	✓	✓
	Image Splitter	OptiMOS, Rolera Thunder	✓	✓	✓
Andor	Camera	CoolSNAP HQ2	✓	✓	✓
		Evolve 512 Delta, Prime (PCI-Express), Prime 95B, Prime BSI	✓	✓	✓
Jenoptik	Camera	Dual View DV2 / QuadView QV2	✓	✓	✓
		iXon X3 897, iXon Ultra 897, iXon Ultra 888, iXon Life 888, iXon Life897, Sonar4.2B-11, Zyla4.2/Zyla4.2	✓	✓	✓
Vincent Associates	Shutter	PLUS (Camera-link, USB3.0), Zyla5.5 (Camera-link 10tap, USB3.0), Neo	✓	✓	✓
	Light Source	ProgRes C3, ProgRes C5	✓	✓	✓
CoolLED	Light Source	Uniblitz shutter (VCM-D1, VMM-D1, VMM-D3)	✓	✓	✓
	Light Source	pE-1, pE-2, pE-4000, pE-300white, pE-300ultra, pE-340fura	✓	✓	✓
Lumencor	Light Source	X-Cite 120 PC, X-Cite exacte, X-Cite XLED1, X-Cite110LED, X-Cite XLYS, X-Cite TURBO	✓	✓	✓
	Light Source	SOLA SEIL, SEIL 365, Spectra X	✓	✓	✓
Sutter	Shutter, FW, Z-drive	Lambda DG4	✓	✓	✓
	Motorized XY Stage	Lambda 10-3/10-B	✓	✓	✓
Prior	Shutter, FW, Z-drive	ProScan (I, II, III) , Optiscan II, III	Multiposition		
	Piezo Z (Control via Real Time Controller)	ProScan (I, II, III) , Optiscan II, III	✓	✓	✓
Ludl	Motorized XY Stage	NanoScanZ NZ100	✓	✓	✓
	Shutter, FW, Z-drive	Mac 6000	✓	✓	✓
Objective Imaging	Motorized XY Stage Controller	Mac 6000	✓	✓	✓
	Z-drive Controller	Oasis 4i	✓	✓	✓
Märzhäuser	Motorized XY Stage	Oasis 4i	✓	✓	✓
	Z-drive Controller	Tango, Pilot Stage	✓	✓	✓
Physik Instrumente	Piezo Z (Control via Real Time Controller)	Tango	✓	✓	✓
	Motorized XY Stage	PIFOOC P-721	✓	✓	✓
Applied Scientific Instrumentation	Motorized XY Stage	MS-2000	Multiposition		
	Z-drive Controller	MS-2000	✓	✓	✓
National Instruments	Digital TTL Device	NI USB-6501	✓	✓	✓
	CSU	NI USB-X1, CSU-W1	✓	✓	✓

\*1 DP72 does not support Windows 8.1/10 32-bit/64-bit. \*2 DP73/80 supports only Windows 7/8.1/10 64-bit. \*3 UC90 is not available in some areas. \*4 DP74 does not support Windows 8.1/10 32-bit.

## Compatible image formats

Read and write	JPEG, JPEG2000, TIFF, BMP, AVI, PNG, VSI, PSD (Adobe Photoshop), Big TIFF, OIR (FLUOVIEW format)
Read only	GIF, OIF/OIB (FLUOVIEW format), Cell, STK (MetaMorph), MRC (Medical Research Council)

## System requirements

OS*	Microsoft Windows 10 Pro (32-bit/64-bit)
OS Language	Microsoft Windows 8.1 Pro (32-bit/64-bit)
CPU	English, Simplified Chinese, Japanese, German, Russian (Entry and Standard) and Italian (Entry and Standard)
RAM	Intel Core i5, Intel Core i7, Intel Xeon Recommended for high-speed image acquisition: QuadCore
Graphics Card	4GB for general applications, 8GB or more is recommended for high-speed image acquisition
Port	1280 x 1024 (min. 1024 x 768) monitor resolution with 32 bit video card with separate graphics memory (no integrated graphics processor with shared memory)
HDD	USB 2.0 port to connect devices to the system FireWire A to connect devices to the system (BX61, IX81, SZX2-MDCU, IX3-DSU etc...) Serial (RS232) to connect devices to the system (BX61, IX81, SZX2-MDCU etc...) Additional PCI/PCIe slots as necessary to connect third-party peripherals (principally third-party cameras) with proprietary interface cards
Drive	1 GB for installation
Web Browser	Recommended for high speed image acquisition: Solid State Drive (SSD)
	DVD drive (Read: DVD-R DL)
	Recommended: Microsoft Internet Explorer 11

\*cellSens Dimension and Dimension Desktop are only compatible with the 64-bit OS.

## Software version update

Version update is available for one year from software activation, and revision update is always available.  
 Optional version update license provides access to the latest version.



## Image data courtesy of:

Hiroo Ueno, Ph.D. Department of Stem Cell Pathology, Kansai Medical University (cover page)

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