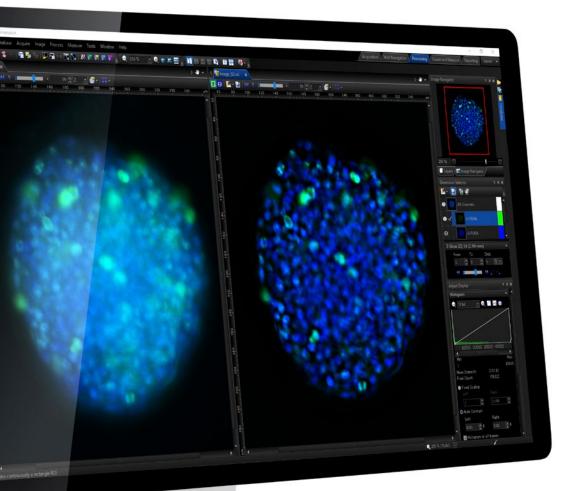


**Imaging Software** 

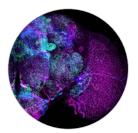
### cellSens

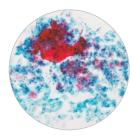
# Intuitive Operation. Seamless Workflow.





For research and clinical research applications







Not for clinical diagnostic use.

### More Time for Research

Whether you work in a lab or are conducting complex research experiments, cellSens software gives you the control to create a seamless workflow tailored to your needs. Find all the tools you need in one place to focus on research and get results quickly.

#### Image

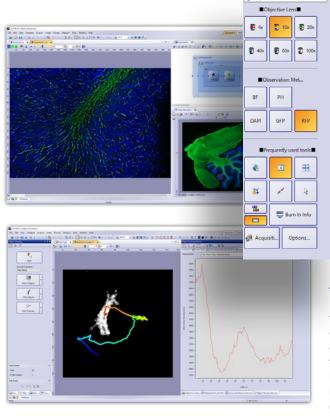
All camera controls are conveniently grouped in one toolbar for efficient imaging. Whether you're capturing a single image or imaging in six dimensions, you can easily accomplish your work using a single software package.

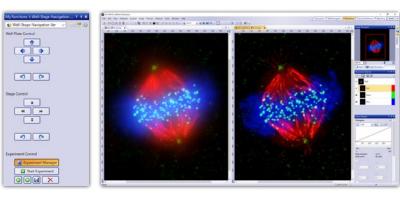
#### Personalize

Intuitive at all skill levels, the cellSens user interface can be fully customized to your current experiment and easily adapts as your application needs evolve. Choose from premade layouts or build your own.

#### Process

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





#### Analyze

[R]Powerful analysis tools enable you to extract data from your images for quantification. Generate simple or complex statistics, make confluency measurements, or export to Excel® for further analysis. In addition, the software's TruAI deep-learning technology, offers improved segmentation analysis. The original images remain unaltered after extraction, so you can feel confident in your research integrity.

## Choose the Version That Suits Your Application

#### Entry

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

### Standard

If your experiments involve fluorescence imaging, cellSens Standard is a cost-effective solution. With all the features of Entry, Standard adds powerful tools like the acquisition of 3D images that combine XY, Ch, T, and multiple points (stitching), as well as the ability to overlay multicolor images and perform simple object counts with just one click.

#### Dimension

Our most advanced microscope imaging solution, cellSens Dimension includes the basic features of Entry and Standard and adds functionality for researchers engaged in complex imaging experiments. It flexibly supports various applications, such as 6D image acquisition that freely combines XY, Z, Ch, T, and multiple points (stitching), as well as image processing, luminance analysis, and colocalization analysis. You can also execute image processing and analysis with one click.

## Specifications

cellSens Solution	ons Included Optional	Entry	Standard	Dimension
Manual Process	Easily create a high-resolution composite images (Instant MIA) by simply moving the manual stage. You can also acquire a focused image (EFI) over the entire surface by manually shifting the Z direction.			
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 to obtain exportable measurement data. Measurement results can be exported to Excel.			
Database Client	Access to the database created with the Database Core option.			
Confluency Checker				
Multiposition	Multipoint and stitched images can be acquired using the motorized stage. When combined with the motorized Z, a focus map can be created from multiple points of focus, and you can obtain stitched images with little focus deviation by removing sample tilt and distortion.	-		
Count & Measure	Define the morphology of an object, and the software will identify all similar objects and present segmentation analysis results in a chart.	-		
Database Core	Make data management and browsing more efficient by creating a database that can easily search and sort acquired images based on data, such as imaging conditions and acquisition date.	-		
NetCam	Facilitates the transfer of live and stored images through a network for teaching, mentoring, or supervision.	-		
Deep Learning	Efficient segmentation analysis powered by deep learning enables challenging target detection, such as label-free nucleus detection.	-		
Well Plate Navigator <sup>*1</sup>	be tagged to images, making data management easier and well plate screening		-	
CI Deconvolution	Access to GPU based deconvolution as well as popular and custom TruSight deconvolution algorithms to improve the sharpness, contrast, and dynamic range of reconstructed images.	-	-	
Ratio/FRET	Obtain ratio measurements from your images as they're being acquired.	-	-	
Tracking* <sup>2</sup>	Measure and analyze the luminance and speed of individual cells that move and divide over time.	-	-	
Life Science Analysis	FRAP / FRET analysis can be performed on the acquired image.	-	-	
Photo Manipulation	Enables cell frap module control and FRAP analysis.	-	-	

#### cellSens Functions

		Dimension	Standard	Entry
Layout	User experience customization	•	•	•
	Overlay multiple images	•	•	-
	Document groups for side-by-side image comparison	•	•	•
View	Movie playback	•	•	•
View	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 multiwavelength	•		-
	Z-stack	•	-	-
	Multidimensional (XYZT and wavelength)	•	-	-
	Graphical Experiment Manager	•	-	-
	Manual panoramic imaging (Instant MIA and Manual MIA)	•	Manual Process	Manual Process
mage	Multiposition visitation and stage navigator	Multiposition	Multiposition	-
Acquisition	Automated panoramic imaging (Auto MIA, requires motorized stage)	Multiposition	Multiposition	-
	Instantly create EFI image (manual or motorized Z)	•	Manual Process	Manual Process
	Simultaneous multicolor Imaging	•		
	(requires two identical cameras** or image splitter)	•	-	-
	Live deblurring	•	-	-
	High dynamic range imaging (HDRI)	•	-	-
	Multiwell plate acquisition	Well Plate Navigator and Multiposition	-	-
	Geometry/combine/filter processing	•	•	-
Image 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	-	-
	Training of Neural Networks	Deep Learning	Deep Learning	-
Deep Learning	Inference using trained Neural Networks (offline/online)	Deep Learning or Count & Measure	Deep Learning or Count & Measure	-

		Dimension	Standard	Entry
	Phase analysis	•	-	-
	Object analysis and classification	Count & Measure	Count & Measure	-
	Interactive 2D measurement	•	•	•*
	Intensity plot over time/z	•	-	-
	Colocalization	•	-	-
	Object counting (manual)	•	•	-
	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	-	-
	Cell count and confluency measurements	٠	Confluency Checker	-
Documentation and Collaboration	Automatically compose MS Word reports	٠	-	-
	Database image and data management solution for microscopy	Database Core	Database Core	-
	Open database and load records/documents from database	Database Client	Database Client	Database Clien
emoting	Remote live image viewing	NetCam	NetCam	

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#### Products with Confirmed Functionality

			Dimension	Standard	Entry
	Camera	DP22, DP23, DP23M, DP27, DP28, DP73, DP74, DP80, XM10, XC10, XC30, XC50, UC30, UC50, UC90, LC20, LC30, SC50, SC100, SC180	٠	٠	•
		BX43, BX53, BX63, BX61, BX61WI, IX83, IX73, IX81, SZX16A	•	•	-
	Micoscope	IX81-ZDC, IX81-ZDC2	•	-	-
Dlympus		BX-DSU, IX3-DSU, IX3-ZDC, IX3-ZDC2, IX2-DSU, IX2-ZDC, IX2-ZDC2,			
Clympuo	Peripherals	U-CBF, cellTIRF (multiline, single line), MT20, USB-ODB converter, Real Time	•	-	-
		Controller (U-RTC and U-RTCE), U-FCB, U-STC			
	Motorized XY Stage	BX3-SSU, IX3-SSU	Multiposition	Multiposition	-
	Light Source	U-LGPS	•	•	-
Hamamatsu	Camera	ORCA R2, ORCA-Flash 2.8, ImagEMX2, ORCA-Flash 4.0 V2, ORCA-Flash 4.0 V3, ORCA-Flash 4.0 LT,ORCA-Flash 4.0 LT PLUS, ORCA-Fusion, ORCA- Fusion BT	٠	-	-
i la nationalista		ORCA-Spark	•	•	-
	Image Splitter	W-View Gemini	•	-	-
Q-Imaging	Camera	Retiga 6000	•	-	-
<u>x</u> integing		CoolSNAP HQ2, Prime (PCI-Express), Prime 95B, Prime BSI,			
Photometrics	Camera	Prime BSI Express, Moment	•	-	-
	Image Splitter	Dual View DV2 / QuadView QV2	•	-	-
		iXon X3 897, iXon Ultra 897, iXon Ultra 888, iXon Life 888,			
Andor	Camera	iXon Life 897,Sona4.2B-11 Zyla4.2/Zyla4.2 PLUS (Camera-link,USB3.0), Zyla5.5 (Camera-link 10tap,USB3.0), Neo 5.5	٠	-	-
Vincent Associates	Shutter	Uniblitz shutter (VCM-D1, VMM-D1, VMM-D3) •		٠	-
	Light Source	pE-1, pE-2, pE-800, pE-4000, pE-340fura	•	-	-
CoolLED		pE-300white, pE-300ultra,	•	•	-
Excelitas	Light Source	X-Cite 120 PC, X-Cite exacte, X-Cite110LED, X-Cite120LED, X-Cite XYLIS, X-Cite TURBO	Cite 120 PC, X-Cite exacte, X-Cite110LED, X-Cite120LED, X-Cite XYLIS,		-
Lumencor	Light Source	SOLA SEII, SEII 365, Spectra X	•	-	-
	Light Source	Lambda DG4		-	
Sutter	Shutter, FW	Lambda 10-3/10-B	•	-	-
	Motorized XY Stage	ProScan III, Optiscan III	Multiposition	-	-
	Shutter, FW, Z-drive	ProScan (I, II, III), Optiscan III	•	-	-
Prior	Piezo Z (Control via Real Time Controller)	NanoScanZ NZ100	•	-	-
	Motorized XY Stage	Mac 6000	Multiposition		-
Ludl					
Objective Imaging	Shutter, FW, Z-drive Motorized XY Stage	Mac 6000	• Multiposition	-	-
	Controller	Controller Oasis 4i		-	-
	Z-drive Controller	Oasis 4i	٠	-	-
Märzhäuser	Motorized XY Stage	Tango, Pilot Stage	Multiposition	-	-
	Z-drive Controller	Tango	٠	-	-
Physik Instrumente	Piezo Z (Control via Real Time Controller)	PIFOC P-721	٠	-	-
Applied Scientific	Motorized XY Stage	MS-2000	Multiposition	-	-
Instrumetation	Z-drive Controller	MS-2000	۰	-	-
National Instruments	Digital TTL Device	NI USB-6501	•	-	-
Yokogawa	CSU	CSU-X1, CSU-W1	•	-	-

Comp	atible image formats	System require	ments
Read and write DIR (FLUOVIEW format)	JPEG, JPEG2000, TIFF,	OS*	Microsoft Windows 10 Pro (64-bit)
	BMP, AVI, PNG, VSI, PSD	OS Language	English, Simplified Chinese, Japanese, German, Russian (Entry and Standard) and Italian (Entry and Standard)
	(Adobe Photoshop), Big TIFF,	CPU	Intel Core i5, Intel Core i7, Intel Xeon Recommended for high-speed image acquisition: QuadCore
	OIR (FLUOVIEW format)		8GB for general applications, 16GB or more is recommended for high-speed image acquisition,
	GIF, OIF/OIB (FLUOVIEW	RAM	32GB or more is recommended for Deep learning
Read	format), Cell, STK		(For DP23/DP28/DP23M, dual memory is recommended for high frame rate imaging)
only	(MetaMorph), MRC (Medical	HDD	1 GB for installation
	Research Council)	TIDD	Recommended for high speed image acquisition: Solid State Drive (SSD)
		Web Browser	Recommended: Microsoft Edge

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