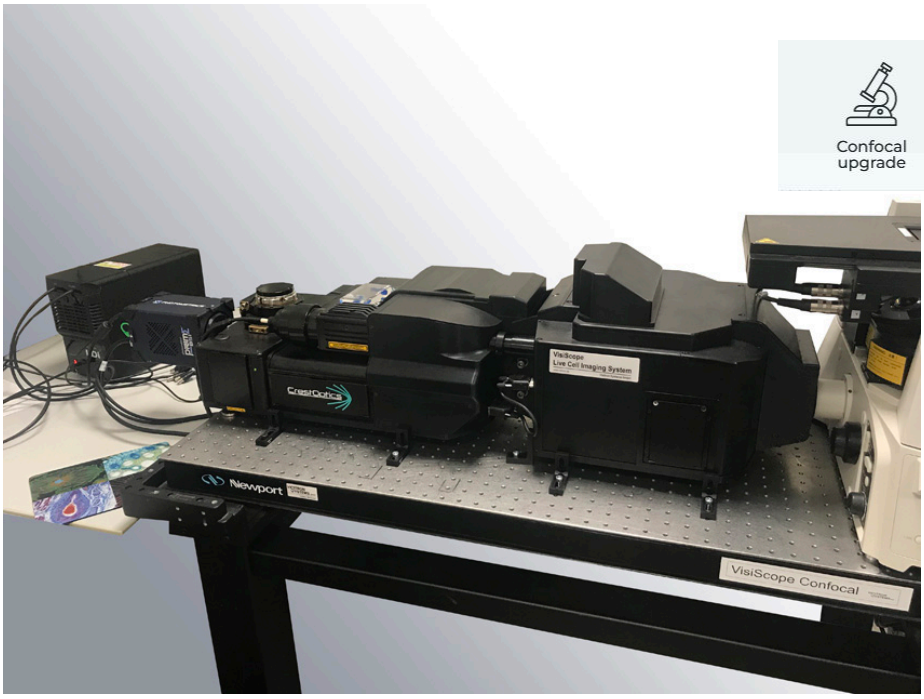
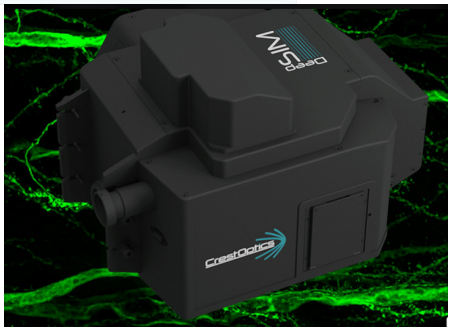
VisiScope DeepSIM Super Resolution System from Crest

Our goal is to make super-resolution accessible to all scientists to advance their research. For this reason, the DeepSIM was developed, the first super-resolution module that is compatible with any existing upright or inverted microscope and can be used like a confocal microscope to facilitate access to super-resolved deep data of biological samples.

VisiScope

DeepSIM Super-Resolution



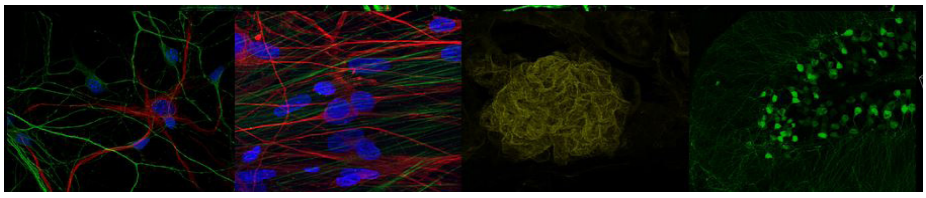


Description

Through the use of a multi-spot structured illumination system, Deep-SIM provides reliable, easy-to-use and affordable solutions to study sub-cellular structures with a XY resolution of 100 nm without requiring any special sample preparation protocol.

Super Resolution

Super-resolved optical sectioning, with Z resolution up to ~ 300nm, can be obtained using both high (60X – 100X) and low magnification (20x – 40x) objectives to expand the range of applications to include complex 3D models such as tissues, organoids, spheroids and small organisms.



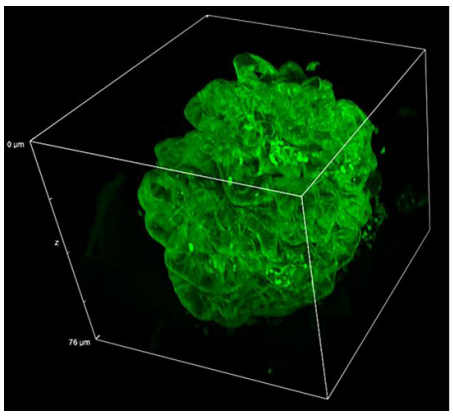
VisiScope

DeepSIM Super-Resolution

VisiScope DeepSIM Super Resolution System

By choosing DeepSIM technology, you will be able to create a modular, expandable, and highly performant system, resulting in the creation of a truly enabling technology.

The DeepSIM can be used both with CrestOptics' X-Light V3 confocal system as well as independently as a Stand-Alone system for any microscope that has a Wide Field camera port.



Cleared mouse kidney section stained with Alexa Fluor 488 labeling blood vessels. Z stack 76µm and 3D rendering.

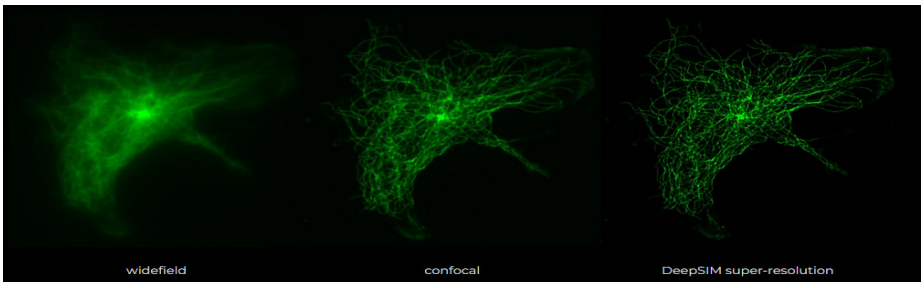
	DeepSIM stand-alone	DeepSIM X-Light
FOV	1024x1024pixel (66x66 µm 100X | 333x333µm 20X)	1024x1024pixel (66x66 µm 100X | 333x333µm 20X)
Resolution	Lateral Resolution (FWHM): ~100 nm (100X NA 1.45) Axial Resolution (FWHM): ~300 nm (100X NA 1.45)	Lateral Resolution (FWHM): ~100 nm (100X NA 1.45) Axial Resolution (FWHM): ~300 nm (100X NA 1.45)
DeepSIM Acquisition speed	13fps (1024x1024px)	13fps (1024x1024px)
Laser spectral range	Excitation: 400-750 nm; emission: 400-850 nm	Excitation: 400-750 nm; emission: 400-850 nm
Objective specifications	-from 20X to 100X magnification range -high numerical aperture (NA) -plan apochromat correction	-from 20X to 100X magnification range -high numerical aperture (NA) -plan apochromat correction
Camera compatibility	Any triggerable camera having 6.5 µm pixel size	Any triggerable camera having 6.5 µm pixel size
Multi cameras option	Single camera	Dual camera option available*
Spinning disk upgrade	Stand-alone solution	Add-on compatible with CrestOptics X-Light V3
Imaging modalities	Super-resolution DeepSIM | Widefield	Super-resolution DeepSIM | Confocal spinning disk X-light V3 | Widefield
Upgradable microscope configuration	Upright and inverted configurations	Inverted configuration
Software	µManager /VisiView® / NIS Elements	µManager /VisiView® / NIS Elements
Installation Conditions	Temperature 23 ± 5°C, Humidity 70% RH or less	Temperature 23 ± 5°C, Humidity 70% RH or less
Weight	50.7 lbs | 23Kg	44 lbs | 20Kg
Dimensions	13.8 (w) x 20.2 (L) x 11.4 (h) inches 352.0 (w) 514.0 (L) x 290.5 (h) mm	14.0 (w) x 17.1 (L) x 11.4 (h) inches 356.0 (w) x 435.0 (L) x 290.5 (h) mm

A single click to double confocal resolution

The DeepSIM is designed to work with samples of thicknesses comparable to those used in confocal microscopy, giving super-resolved data over 50µm Z in depth in non-clarified samples.

This means that more meaningful data can be obtained from native heterogeneous complex samples using routine preparation protocols.

DeepSIM enables the effortless study of live-cell dynamics through a temporal resolution greater than 10fps (1024×1024 px FOV), allowing biological changes to be tracked at cellular and subcellular levels.



Comparison of mouse primary microglia cell, alpha-tubulin

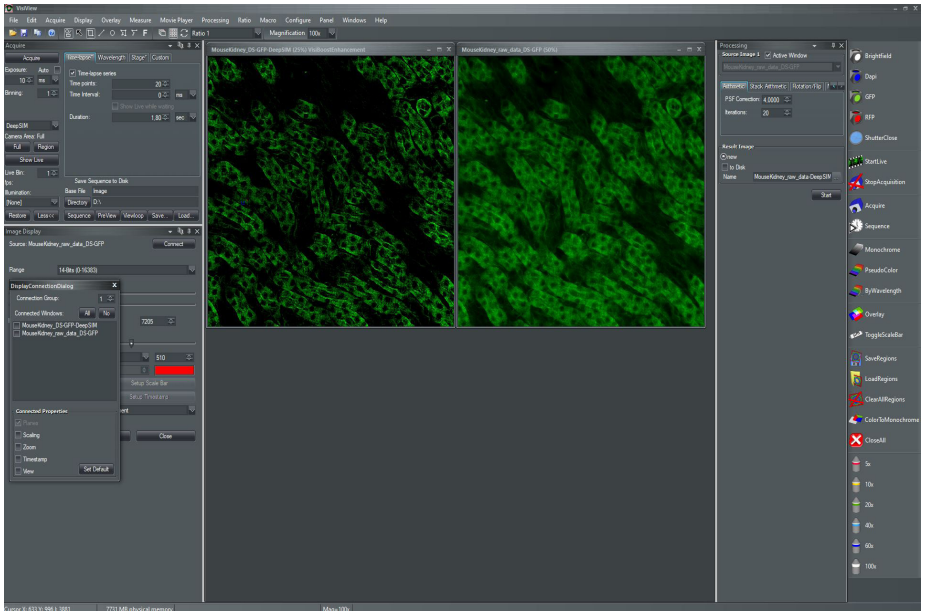
VisiView® is a high performance imaging software from Visitron Systems GmbH for BioMedical applications. The software is designed as an integrated imaging software which includes comprehensive microscope control, unprecedented control of peripheral devices, image acquisition, analysis and documentation. Its multitasking ability supports realtime image handling and up to 6D multidimensional acquisition. The VisiView® software represents the philosophy of simple operation and seamless integration of applied standards.

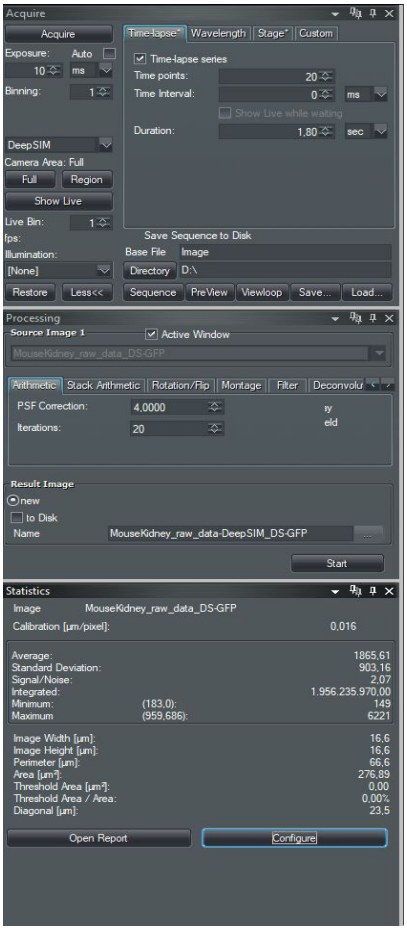
It fully supports the new Crest DeepSIM technology or Xlight confocal for single or simultanous multichannel application.

VisiScope

DeepSIM

VisiView® Imaging Software



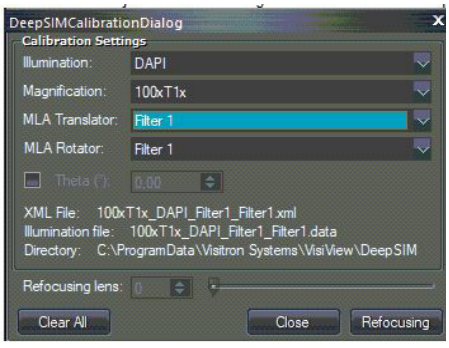


Time-Lapse Acquisition

Acquire changes in living specimens over time at defined intervals and display the image sequence as a movie to show cellular dynamics. The image sequence will be saved in single OME TIFF, multifile stack or .nd format.

Single or Multichannel Acquisition

The MDA-Multi Dimensional Acquisition gives you a comprehensive view of your multi dimensional experiment. This means a free combination of z-stack (focus), different wavelengths (channel), time points and different xy stage positions in one sequence acquisition (6D-imaging).



Control of Automated Microscopes

The scope control allows you to control all motorized microscopes from any vendor. We have easy access to any illumination component like filter cube changer, shutter or condenser control. The objectives can be easily selected and calibrated. The focus control allows both the automatic generation of Z-stack images and the software autofocus readjustment to keep your cells in best focus.