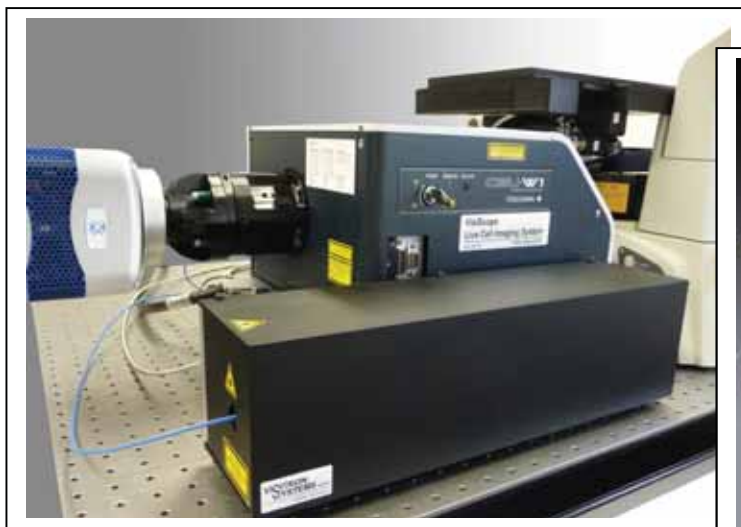


Intelligent BioMed-Solutions from Visitron Systems GmbH

Visitron Homogenizer for VisiScope-Confocal-CSU W1

The new Visitron Systems GmbH “**VS-Homogenizer**” optics, are designed to enhance the laser illumination of Spinning Disk Confocal CSU-W1. This optical component can be added on request to already installed CSU-W1 confocal scan heads. The existing functionality of the original CSU confocal head remains. This enhancement offers even illumination of large cell areas and allows high-sensitivity imaging of living cells without the need for mathematical shading correction.



Technical Background

Laser-based Microscopy generally uses gaussian beams to achieve optimal focusing of the excitation light in the sample plane. However, this requires making a trade-off between excitation uniformity and intensity. The new Visitron VS-Homogenizer tackles this challenge by providing a flat intensity profile whilst maintaining optimal focusing of the laser beam in the sample plane.

Features and Benefits

- Uniformity improvement to 5-10% depending on used microscope equipment and used microscope optics
- Single mode fiber coupling with minimal power loss at pinhole
- Maintains high signal to noise ratio of standard Yokogawa CSU-W1
- No beam conditioning unit required

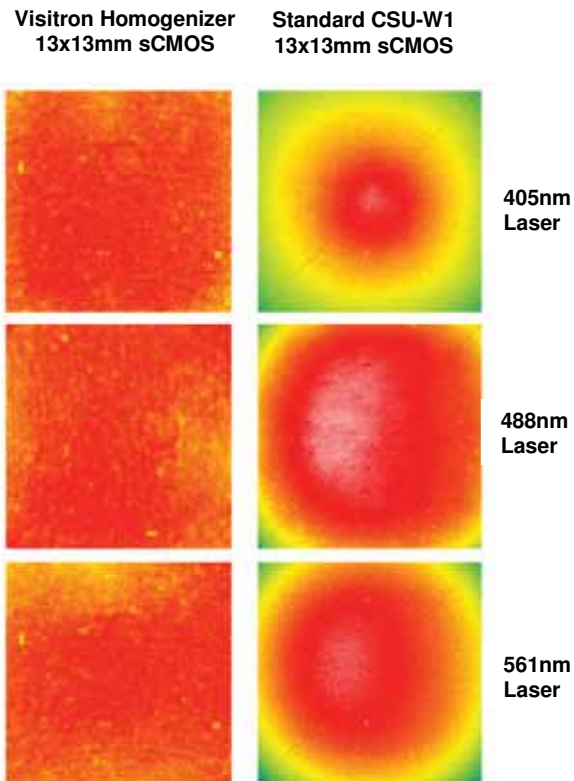
Application:

- Flat Intensity Profile
- Optimal Light Efficiency
- Minimal Background

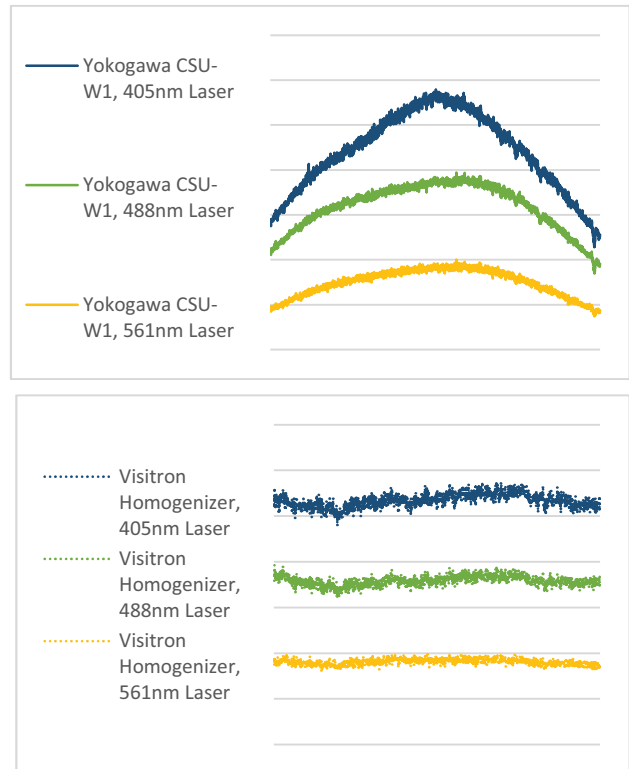
Application: Confocal Spinning Disk Imaging

An increasing number of live cell imaging applications requires the acquisition of large sample areas. Quantitative measurements over complete Slide Scans or Multi-Well Experiments benefit strongly from a uniform excitation intensity profile. The Visitron Homogenizer achieves this with minimal beam modifications for optimal light efficiency and signal-to-noise ratio.

Increased Field Uniformity

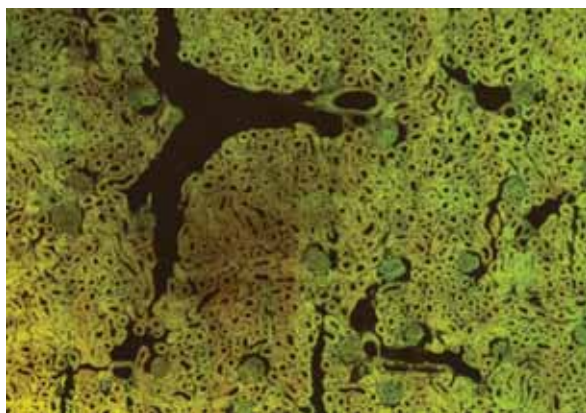


Comparison of Diagonal Line Scans

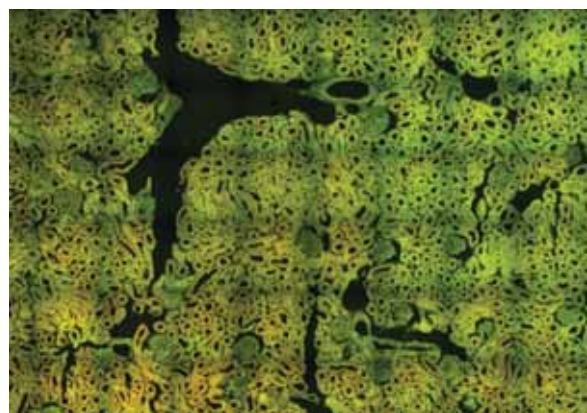


Result: Minimized Stitching Artifacts

13x13mm Field of View of a sCMOS camera and 63x/1.4 Oil Objective.



Scan Slide Acquisition of 6x8 images with Visitron Homogenizer.



Scan Slide Acquisition of 6x8 images with a standard Yokogawa CSU-W1 System.