Digital Camera Family

As a microscopy product independent manufacturer, Visitron Systems GmbH offers most flexible imaging systems based on color or monochrome digital cameras for Histology or Fluorescence analysis. All known camera manufacturers like Teledyne /Photometrics, QImaging, Andor, Hamamatsu, PCO or our own OEM VisiCam are offered in combination with our VisiView® Microscopy Imaging Software.
Our range of supported cameras, for any kind of microscopy applications and documentation of imaging, ensures that you will find the real combination of specifications that match your requirements.

Visitron

Digital Camera Family

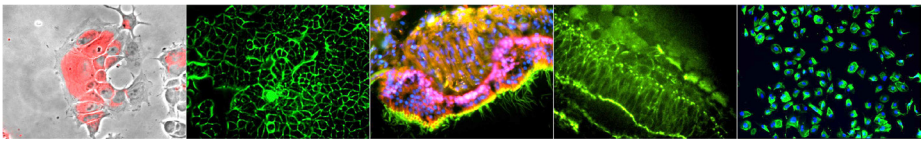
Example of camera family with Photometrics, PCO and VisiCAM cameras

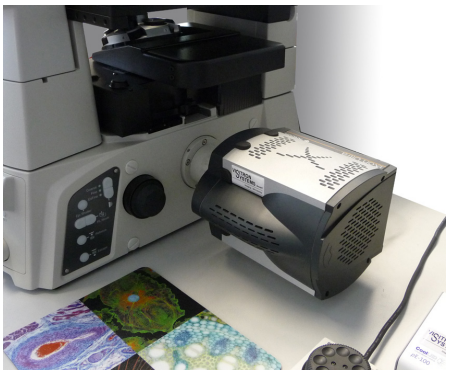
Cameras from „Low Cost“ to „Advanced High Quality“!

From „Low Cost“ to dedicated „Advanced High Quality“ imaging technology, Visitron offers the most flexible combinations with full support of all manual or motorized microscopes from Zeiss, Leica, Olympus or Nikon.

Explore our camera product range!

Our scientific cameras cover a wide range of specification requirements to meet your needs: from CCD, EMCCD, CMOS or sCMOS technology.





High Performance Andor EMCCD camera iXON with Nikon Ti

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Digital Camera Family

monochrome CCD- sCMOS

High Speed Microscope Imaging System

The new generation of innovative scientific sCMOS sensors provides crisp images and precise measurements. It is an ideal imaging device with up to 5,5 megapixel array, which enables observation of large fields of view at maximum resolution with 6,5 µm pixel size. The high speeds of up to 100 frames per second at an extremely low read noise level with 16 Bit dynamic opens new application fields in digital imaging and microscopy.

Andor sCMOS Zyla camera with Olympus IX83 microscope

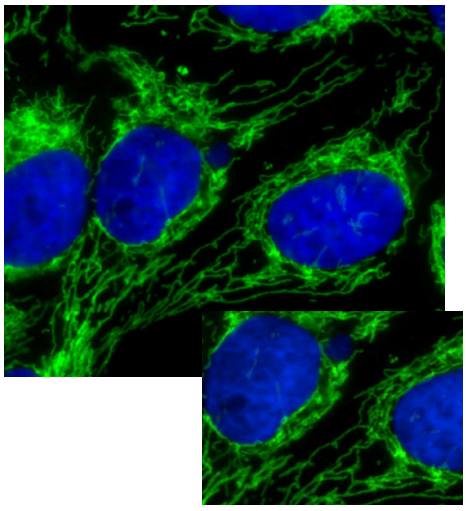
Images Acquisition from single up to hundred thousands of images!

The new OME 64bit TIFF format was created to maximize the respective strenghts of OME-XML and TIFF. It takes advantage of the metadata defined in OME-XML while retaining the pixel in multipage format for compatibility with many more applications.

Camera Manfacturers out of one hand!

- Teledyne/Photometrics with sCMOS and CCD series e.g. Prime/Iris
- QImaing with CCD cameras like Retiga series
- Andor with sCMOS and EMCCD like iXON/Zyla series
- Hamamatsu with sCMOS and CCD like Flash/Orca series
- PCO with Edge/Panda/Pixel Fly series
- VisiCam OEM CCD/CMOS series

Hamamatsu Flash sCMOS camera with CSU-W1 spinning disk confocal



The two images show in comparison the field of view of a 5.5 Mpixel sensor vs. a standard 1.3 Mpixel sensor.

Technical Specifications:

- NEW sCMOS technology
- Resolution up to 2560 x 2160 pixel
- Pixel size 6,5 µm x 6,5 µm
- Low noise of < 2.0 e- rms
- Dynamic 24.000 : 1; 16 bit ADC
- Quantum efficiency up to 95%
- High speed 100 fps
- Peltier / air cooling
- Rolling shutter
- Global shutter option

VISITRON SYSTEMS GmbH
Microscopy and Imaging

High resolution RGB Imaging System

Histology and Histopathology focus on the microscopic investigation of stained tissue sections. It is performed by examining the tissue sample under a light microscope. Our Visitron HistoScope Imaging System enables the user to visualize and identify the microscopic structures of interest and to save the images independently.

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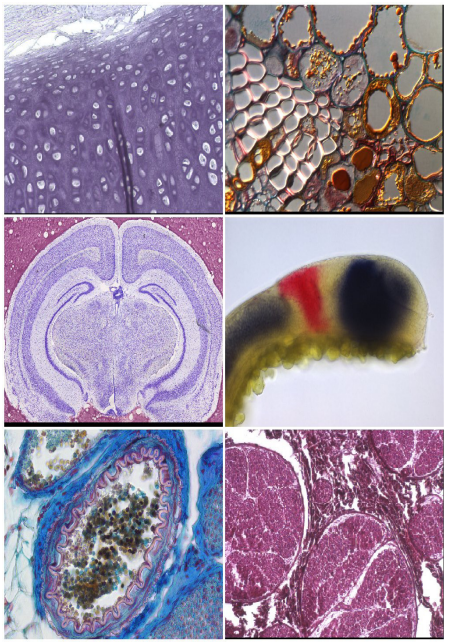
RGB-HistoScope

Low Cost VisiCam CCD camera with Zeiss Axio Skope A1



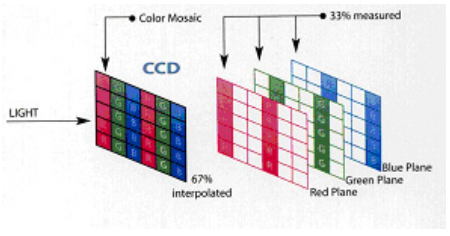
True Color and Resolution

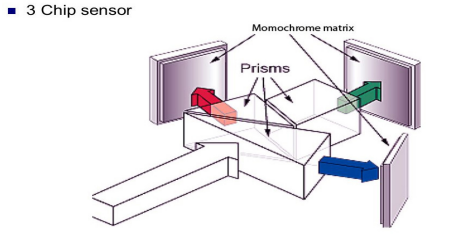
To get the best resolution and true colour information for the correct analysis and diagnosis, we offer state-of-the-art color CCD cameras with color mosaic filter or 3-Chip RGB. The easy to use VisiView imaging software, controls the camera acquisition, color correction, overlay and analysis of the images.

Typically RGB cameras are used for Histology / Pathology application. For some applications, cooled RGB cameras are also used for multicolor or autofluorescence analysis or professional documentation.

Some Selection Criteria:

- Resolution, pixel size
- Field of view, number of pixels
- Physical dynamic 8, 12, 14 or 16 bit / pixel size
- Mosaic, 3-Chip or 3-shot technology
- RGB dynamic 8, 24, 36 bit
- Readout speed, frame rate
- Cooling of CCD, dark charge reduction





How to get color:
Mosaic CCD Sensor;
3-Chip CCD Sensor;

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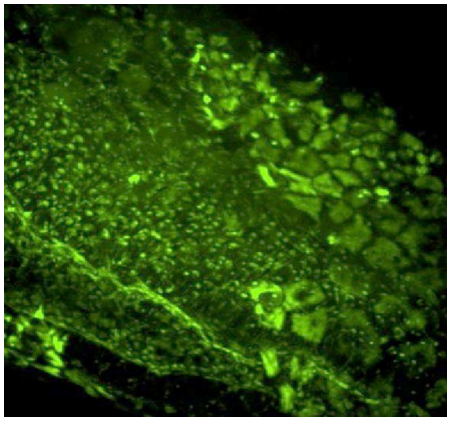
Digital Camera Family

Application

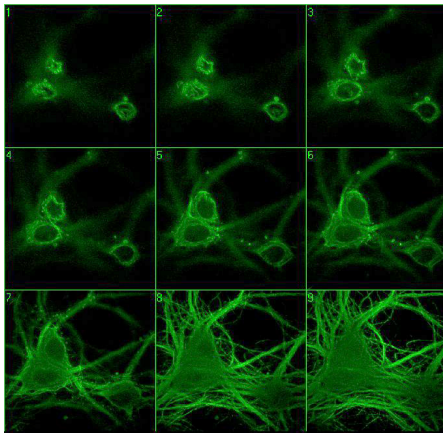
Application and Image Analysis

Large and complex image data acquired in biology, medicine and environmental sciences demand specialized software to perform such tasks as cell analysis, image reconstruction and multi-dimensional data visualization. To accomplish this task, these systems require the identification of relevant regions of interest (ROIs) within an image, extraction of image features and classification of the images. To highlight regions within such images e.g. a thresholding is used for segmentation. All these analysis can be done with the VisiView® 5D Viewer, Measure and Analysis tool.



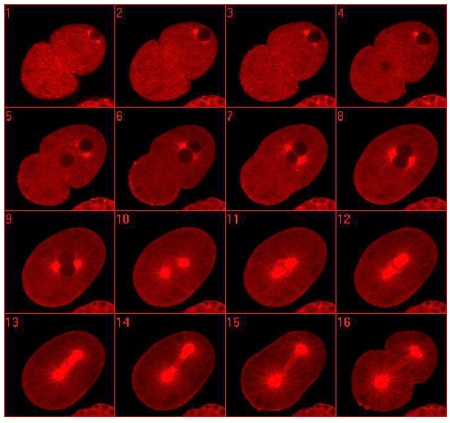
Cell Biology Applications

Cellular processes are highly dynamic events and the imaging system must be able to keep up with these processes. Applications such as observing the cytoskeleton, membrane transport or organelle dynamics, often require three-dimensional image series as well as maximum resolution for reliable analysis.



Physiology Applications

The fluorescence technique can be used to directly observe a variety of intracellular processes in real time. Ion signalling, membrane potential or membrane organization can be probed with suitable reporter dyes and changes can be recorded at a high temporal resolution.



Developmental Biology Applications

The development of an organism is a complex process of cellular signaling, growth and differentiation. It is important to examine cell division and migration during early development of the morphogenetic processes at constant enviromental conditions as well as preventing cells from damage due to observation techniques.

VisiView® a High Performance Imaging Software

Image analysis begins with accurate acquisition. The VisiView® software supports a wide range of digital color or black/white scientific grade cameras, automated microscopes and other microscope peripheral devices. Display and scaling of high-dynamic images of 8, 16 or 24bit is possible.
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 TIFF, multifile stack, .nd or OME format.

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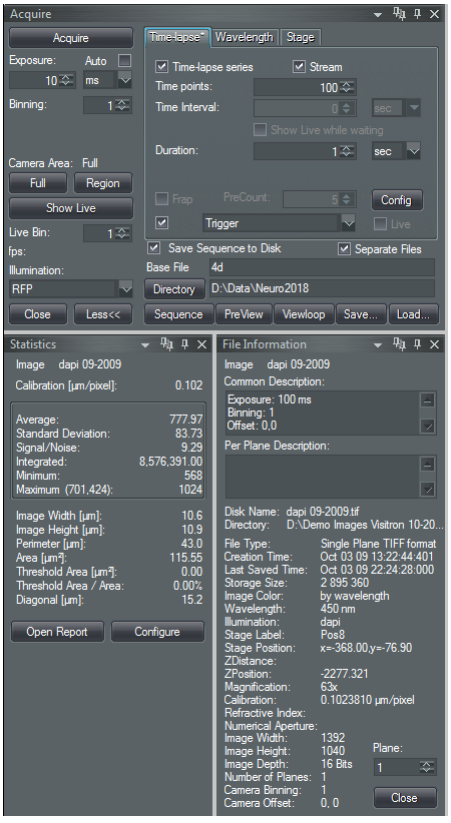
VisiView® Software

Single or Multichannel Acquisition

Don`t miss a detail!
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).



Simultaneous Image Acquisition: Up to four Cameras in Multi-Camera Mode

Four Cameras – in live image displays, who can do this?
Beside the control of multiple cameras from different vendors or models within one PC, VisiView supports up to four cameras from the same model in simultaneous mode. This allows the observation of e.g. four different fluorochromes at the same time. As a result the negative effects related to sequential image acquisition, like time delay between colors, are avoided.
This function is perfectly suited for performing highly reliable ion measurements with emission ratio dyes (e.g. indo-1, cameleon), FRET or performing colocalisation studies.

Statistic

The statistics menu indicates image or region information within the active window. Features comprise calibration size µm/pixel, average, standard deviation, signal/noise, integral, min/max, perimeter, area µm² and diagonal µm.

Measurement

The measurement option offers comfortable evaluation of image data by statistical processing, line scan graph, intensity over time graph and histogram display.