

VisiFluor High Performance Calcium, Ion and FRET Imaging

The ratiometric imaging requires rapid wavelength switching. The VisiChrome Polychromator has been designed for this application. Within less than 2 ms any wavelength between 330 to 650 nm can be selected without causing any vibrations. As an alternative for slower ratio applications, still fast excitation filter wheel systems with free selection of filters can be used in combination with a separate light source.

VisiFluor

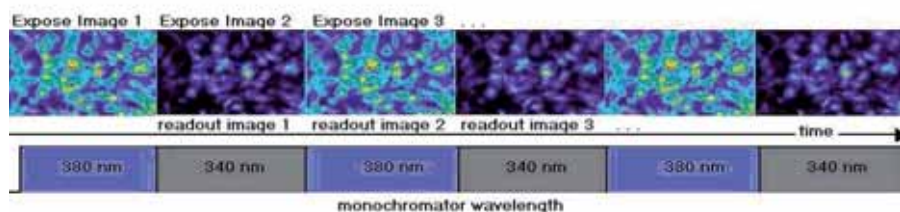
On-Line Ratio Imaging System

Use of Filter Wheel System

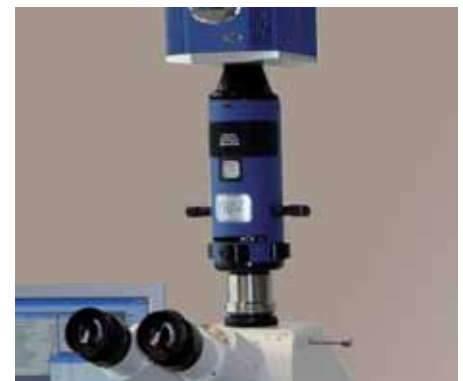
For slower excitation ratio applications in the range of 2-4 ratios/second, the VisiFluor imaging system is using flexible excitation filter wheels. In that combination, a normal xenon lamp or metal halide lamp with UV response is used.

Simultaneous Image Acquisition with DualView Imager

For emission ratio applications like FRET, an emission filter wheel system can be used. For simultaneous measurement of two emission wavelengths (CFP/YFP) at the same time, a DualView Imager is the better solution. The VisiView SplitView option allows the on-line division of the two image sets.



Excitation filter wheel.



DualView Imager.

Do Not Waste your Light:

Perform your measurement as long as the signal lasts. The answer to photo-bleaching and toxicity is efficiency and speed. Therefore, we offer a number of high-end solutions focusing on the following features:

- Highest Sensitivity:**
 - Maximum quantum efficiency (up to 95%)
 - Minimum system noise (down to $2 e^-$)
 - Minimum dark signal
- Minimum Dead-Time:**
 - Using of frame transfer and Interline CCD Cameras allows readout and exposure
 - Leading to duty-cycles up to 100%
- Dual Wavelength Stream:**
 - Acquisition runs at full speed, while the excitation wavelength toggles



DG-4 high speed illumination system with 300W power.

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VisiChrome Tunable Fluorescence Light Source High Speed Polychromatic Illumination System

The VisiChrome polychromatic illumination system is a high speed switching monochromator with high precision galvanometer driven grating. It is ideally suited for multi-wavelength applications as well as excitation scanning. The compact single monochromator design permits the selection of any single wavelength in two milliseconds or less. It is easily controlled via a single low voltage signal line.



Axio Observer with VisiChrome illumination system.



VisiChrome with fiber guide.

Features

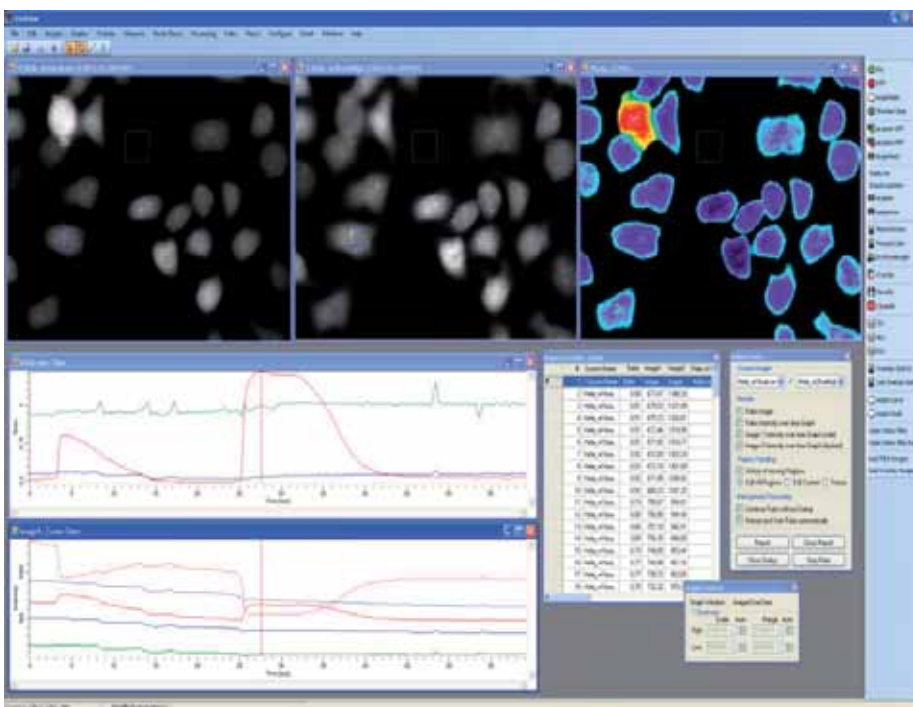
- » High power xenon lamp with „ultra high point intensity“
- » Wavelength range between 320 nm up to 650 nm, variable bandwidth from 1 nm - 30 nm
- » Including additional mechanical internal shutter to avoid illumination of cells by polychromator shutter position
- » High speed wavelength change by control via PC-DAC board
- » Programming of automatic sequences with toggle mode

VisiView® On-Line Ratio Option

The Ratio option of VisiVIEW® is an application solution. It is designed specially for on-line ratio applications of single or dual wavelength intracellular measurements such as Fura-2, BCECF, FRET or single wavelength dyes. The Ratio option provides a simultaneous display of the original wavelength e.g. 340 nm, 380 nm, ratio image and the graphs for intensities. Intensity vs time graph can be plotted for multiple regions at once.

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On-Line Ratio Imaging System



Interactive Display and Graphs

A display of multiple graphs gives flexible access to the experimental data or measurements. The VisiView® Ratio option enables interactive replay of image data and graph traces. The display shows the correct image sequence depending on time with correct intensity values.

Threshold Measurement

To provide clear isolation of labeled cells, the VisiView Ratio can apply a gray level threshold to each collected image. Use of this threshold helps to reduce the distracting effect of low level signal like background fluorescence. This process improves the accuracy of collected data by excluding the threshold region from the ratio calculation.

Event Marks

During the experiment, the event mark function can be used to store the injection time, changes in experiment conditions or applied triggers. The mark in the time scale shows the exact time when the event happened.

