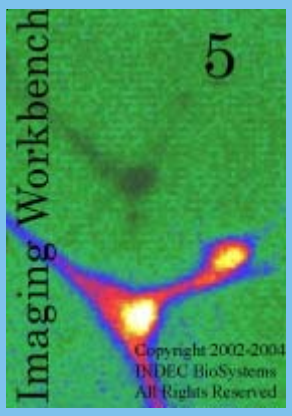


INDEC BioSystems

Applications

High time resolution imaging

Ion imaging (Ca^{++}, pH, etc.)

High sensitivity imaging with long exposure times

TIRF

FRET

Combined imaging and electrophysiology

Cell volume change measurements

Ratiometric and nonratiometric image acquisition and analysis

Multiple dye and several wavelength imaging

Video rate imaging

Time lapse imaging

Image snap and archive

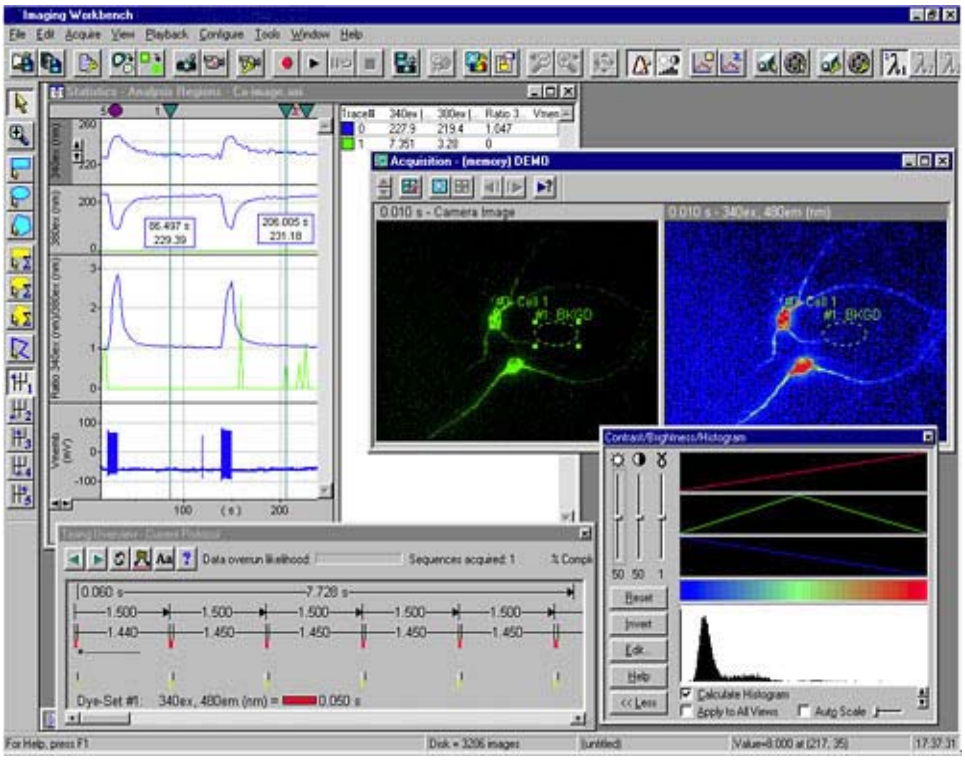
Coming –

Imaging Workbench Plus **optional software with major new visualization and analysis functionality for IW 5 images and data**

Imaging Workbench 5

Time Series Multiwavelength Fluorescence Imaging of Live Cell Preparations

Imaging Workbench 5 is a proven program for multichannel dynamic fluorescence image acquisition and analysis, with precise control of wavelength switchers and other external equipment during acquisition, and flexible review and data extraction during analysis. IW 5 also seamlessly integrates concurrent electrophysiology and imaging in a single computer.



IW 5 – Key Features

Acquires time series fluorescence images of live cell preparations

Supports digital cameras, video cameras, VHS tape, fast monochromators, filter wheels, shutters and more, from the major manufacturers

Performs ratiometric and nonratiometric experiments

Calculates intensities, ratios and ion concentrations over time, averaged over user-defined regions

Implements ΔF/Fo, background subtraction and shading correction

Performs online analyses during experiments

Continuously updates graphs

Cooperates with Axon Instruments' pCLAMP and AxoScope

Analyzes acquired image data online or offline

Exports data to movies, images and spreadsheet files

Windows XP, 2000 and 98 compatible

IW 5 – Unique, Targeted Fluorescence Software

Easy to use, intuitive user interface

Ideal for users interested in millisecond time frame events

Supports the full speed of each camera as established by the camera manufacturer

Allows simultaneous acquisition of two Dye-Sets — each can be either a ratio dye (2 wavelengths) or a nonratio dye (up to 3 wavelengths)

See all your images online as you acquire and analyze — e.g. 340 nm, 380 nm and ratio — even pre- and post-background subtraction

Electrophysiology cooperation: synchronized acquisition of imaging with Clampex — runs Clampex-style episodic protocols — automatically imports Clampex data into Imaging Workbench 5 graphs — flexible triggering support between Clampex and IW 5 — identical or similar icons as in Clampex allow easy familiarity to Axon users

Analyzes a complete stack of images in one pass

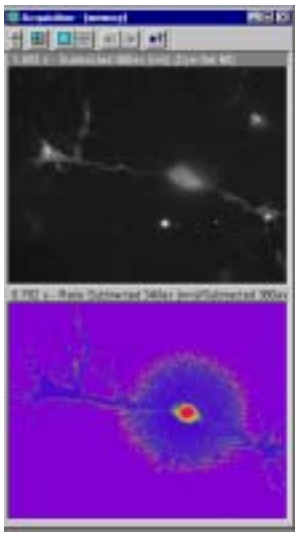
Move all the regions of interest together if the cells move or the microscope stage shifts

Exports data to third-party analysis software such as Microsoft Excel, Origin and SigmaPlot

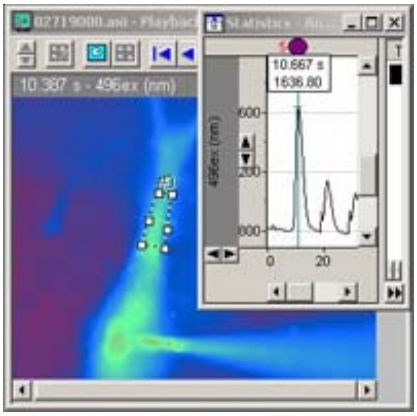
A proven, stable product — experiment with confidence

Expert and attentive sales and technical support

Ongoing development assures you of more features in the future — with special relevance to biophysics, neurosciences and cell biology



Two-dye recording: FM1-43 (top) and fura-2 ratio (bottom)



Patch-clamped cell, electrode at lower edge. Calcium transient in outlined region is shown in graph

IW 5.1 – New Features

Image acquisition

- Photometrics Cascade with on-chip gain
- Hamamatsu ORCA (and other models) with optional on-chip gain
- Always-on-top Acquisition Control Panel for on-the-fly changes to acquisition parameters
- External trigger or spacebar can start a run, trial or sequence

Image analysis

- ΔF/Fo: average Fo over images for lower noise
- Spatial calibration for lengths and areas
- Dynamic background subtraction: automatically average the fluorescence over a selected region without cells and subtract that value from the whole image. Apply this to an image stack to automatically correct for shifts in background level caused by dyes in solution.

Dual monitor support

IW 5.2 – Continuing Development

For the latest developments, visit our Web site, call us, or visit our booth at the Biophysics and Neurosciences Meetings.

How to buy IW 5

- Preserve your investment by upgrading from Imaging Workbench 2 or 4
- Order IW 5 alone for a new or existing imaging system
- Purchase IW 5 as part of an Integrated Imaging System

Discounts are available for upgrades, site licenses and multiple installations

Integrated Imaging Systems – customized turn-key solutions for your imaging needs

INDEC BioSystems can put together a complete imaging system to meet your requirements and budget.

We can arrange for demonstrations at your site, with combined evaluation of camera and IW 5.

Example configurations:

1. High Speed Multiwavelength Systems

Top performance imaging with our high-speed system:

- High speed wavelength switching with fast monochromator or wavelength switcher (TILL Photonics Polychrome, Sutter DG-4, Cairn Optoscan)
- Supports the full speed of each camera as defined by the manufacturer.

2. Standard Multiwavelength Systems

For FRET, TIRF and slower cellular events:

- Filter wheel wavelength switcher (Sutter Lambda 10-2, Ludl MAC 5000, Cairn Rotor)

3. Single Wavelength Systems

High sensitivity or high-speed systems at low cost:

- Fast shutter in place of filter switcher (Uniblitz)

4. Combined Electrophysiology and Imaging Systems

IW 5 seamlessly integrates electrophysiology and imaging into a single computer. Add imaging to your electrophysiology setup!

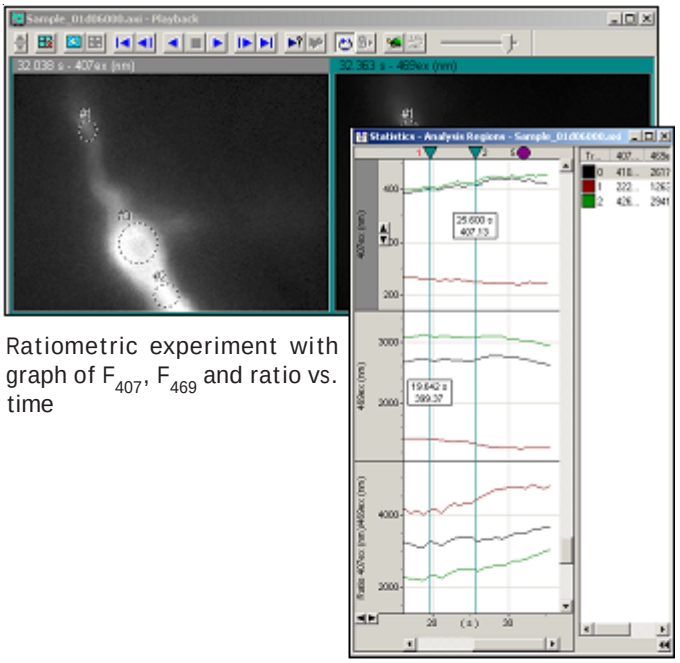
Services of INDEC BioSystems

Presales applications consultation

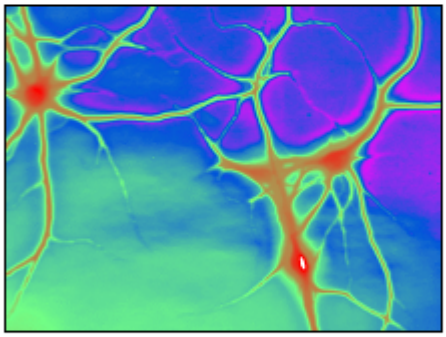
Configuration of components or systems

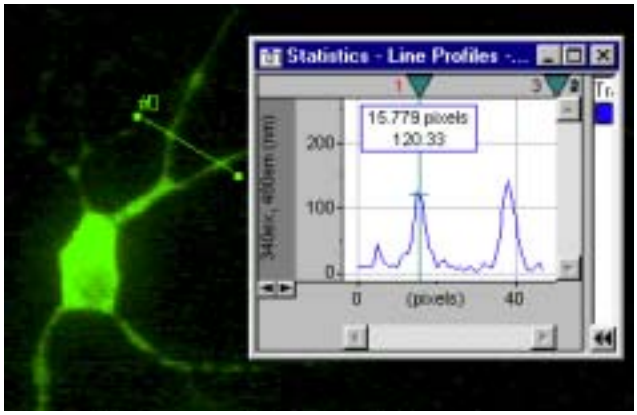
Demonstration, on-site and/or via Internet conference

On-site installation and training

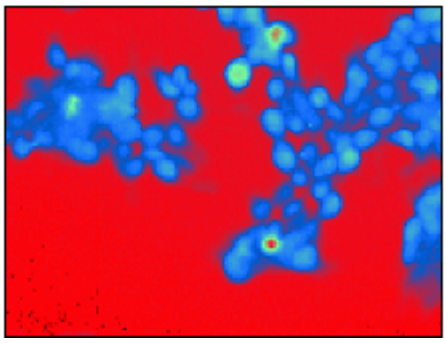


Ratiometric experiment with graph of F_{407}, F_{469} and ratio vs. time





Line profile across image



Specifications

IW 5 supports the following devices:

PCO 1600 Cooled Digital Camera

PCO SensiCam QE Cooled Digital Camera

Photometrics CoolSNAP FX Cooled Digital Camera

Photometrics Cascade Cooled Digital Camera

Hamamatsu ORCA9100 CCD Camera

Hamamatsu ORCA-AG Deep Cooled Digital Camera

TILL Photonics Polychrome IV/V

Sutter Instrument DG-4

Cairn Optoscan Monochromator

Sutter Instrument Lambda 10-2 filter wheel with shutter

Ludl Electronic Products MAC 5000 filter wheel

Vincent Associates Uniblitz Shutter

Axon Instruments Axopatch

Axon Instruments Digidata 1322A

Axon Instruments pCLAMP

IW 5 also supports devices not listed here, such as many other cameras from PCO, Photometrics and Princeton Instruments; analog video cameras and VHS tape; all TILL Photonics Polychrome models and PTI DeltaRAM, etc. — call to inquire

Computer requirements

Windows XP/2000: Pentium PC with at least a 500 MHz CPU and at least 512 MB RAM (Windows 98: at least a 300 MHz CPU and at least 128 MB); 16-bit color graphics (best at 24- or 32-bit); 1024×768 display (best at 1280×1024); Internet Explorer 4 or later for online Help; PCI slot for Polychrome, Optoscan or DeltaRAM; parallel port for Lambda series, Uniblitz; USB port for dongle

Users of the Image Lightning 2000 frame grabber-processor –
Contact us for details of our replacement program

Try a fully functional version of IW 5 on your setup

Try the full IW 5 on your setup. The evaluation version contains all the functionality of the purchased IW 5 but will stop working once the trial period ends. You can evaluate IW 5 with your own imaging equipment to verify its stability, ease of use and performance.

Contact INDEC BioSystems or our distributors, or visit our Web site, to arrange for a trial.

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Outside North America, visit our Web site to locate a distributor near you

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