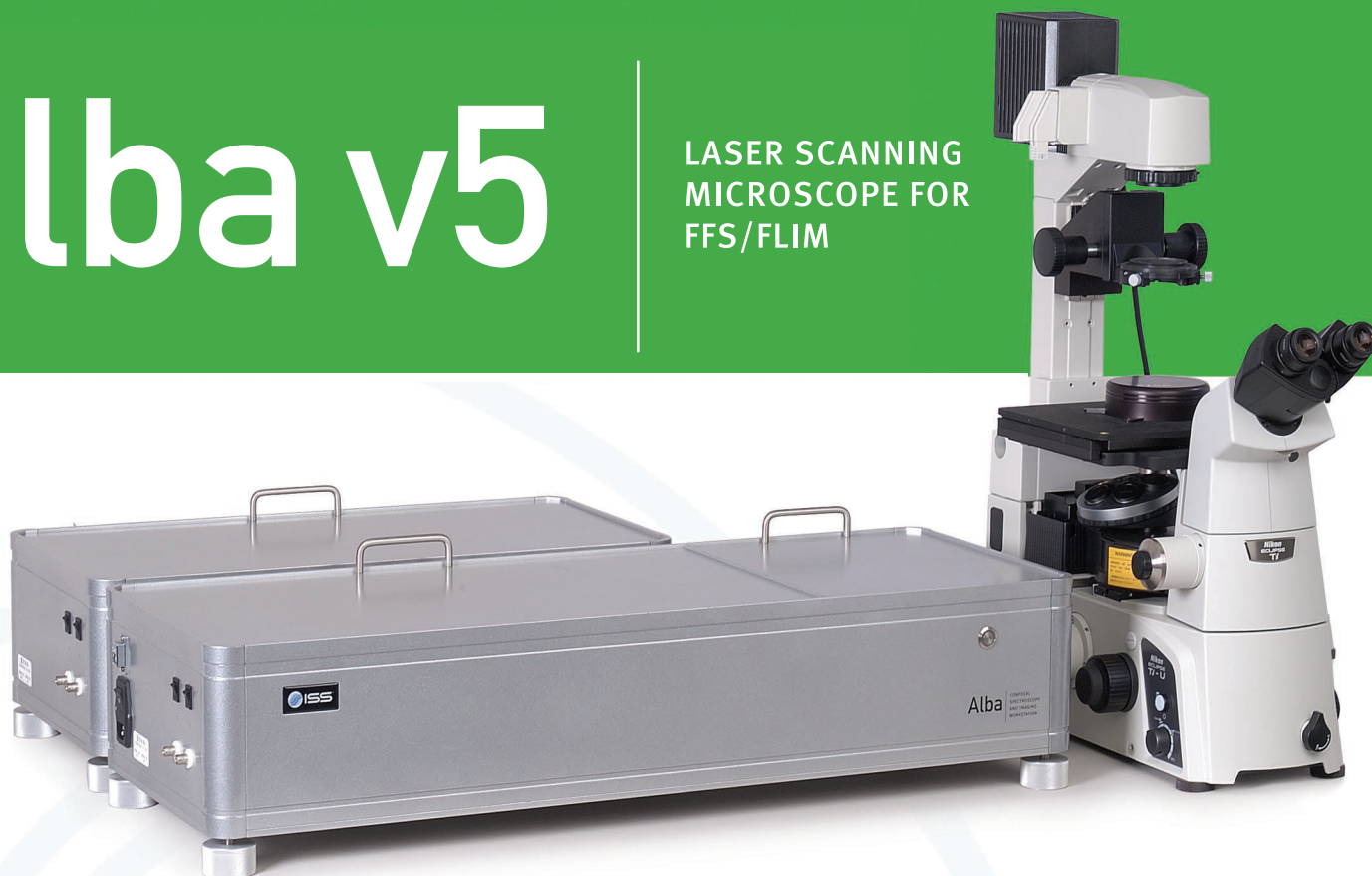


# alba v5

LASER SCANNING  
MICROSCOPE FOR  
FFS/FLIM



Alba is a laser scanning microscope that incorporates several measurement modalities for experimental quantitative biology and material sciences applications requiring the single molecule detection sensitivity.

The measurement capabilities of the Alba v5 include:

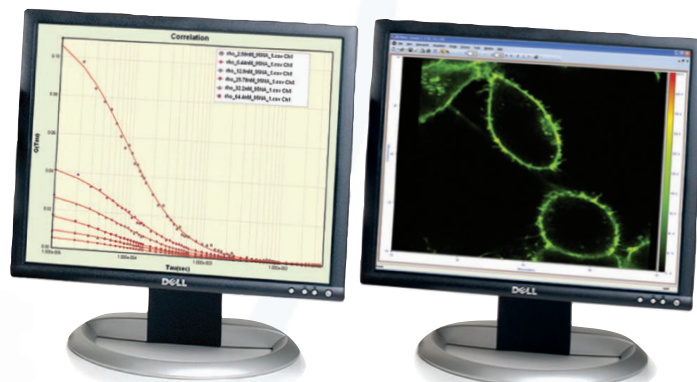
- FRET and FLIM images
- Polarization and ratiometric images
- Kinetics
- Time-lapse recording
- RICS (Raster Scan Image Correlation Spectroscopy)
- N&B (Number & Brightness)
- FCS and FCCS (Auto- and cross-correlation)
- FLCS (Fluorescence Lifetime Correlation Spectroscopy)
- PCHs (Photon Counting Histograms)
- Fluorescence Polarization FCS
- Scanning FCS
- Particle Tracking

## User-Friendly Software

Alba includes *Vista Vision* - A comprehensive, user friendly software package for acquiring FCS, PCH, FLCS, FLIM, FRET and RICS data.

## Key Features

- Digital Frequency-domain or Time-domain (TCSPC)
- Four-channel instrument
- Single- and multi-photon excitation
- Computer-controlled optimization of optical elements
- Imaging with galvo scanning mirrors or piezo-controlled XYZ stage
- Flexibility and Versatility





# alba v5

## Specifications

### Software Specifications

#### Vista Vision – FCS and Confocal Imaging Microscopy Software

Alba features Vista Vision, a comprehensive, user-friendly software package for the acquisition and analysis of FLIM, FRET, FCS, FCCS and RICS data.

### Image Acquisition

#### Image Acquisition (Raster Scan)

Vista Vision offers the user the flexibility to choose between the following image acquisition parameters:

- Pixels number: user selectable from 2 to 8192
- Max line frequency: 4 KHz (on 20 points)
- Min line frequency: 0.01 Hz
- Max frame rate 512x512: 2 sec
- Max frame rate 256x256: 0.4 sec
- Beam park
- Panning
- Field rotation: 2000 optical
- Field diameter: 18 mm

#### Scan Modes

Vista Vision provides several options for kinetic studies (t, Xt, XYt, XZ, XYZ and XZt), and for optical sectioning (XZ, XYZ) of specimens.

#### Input/Output

- 2 channels input
- 5 channels output

#### Image Formats

- Export to ImageJ, MetaMorph
- Plots can be saved and exported to GIF, TIFF, JPEG, PNG, Bitmap and Metafile formats

### Data Acquisition & Analysis

#### Data Acquisition Modes

Alba acquires data in either time mode (photons are counted during fixed, user-defined time intervals), or photon mode (time delay between photons is used to build histograms).

#### FFS Data Analysis

Vista Vision utilizes the following statistical functions for data analysis:

- Auto-correlation function, Cross-correlation function
- Photon Counting Histogram (PCH)
- A custom function can be used as a model

#### FLIM Data Analysis

- Minimization Technique
- Phasor plots

For more detailed information on Alba's capabilities please refer to Alba FLIM and Alba FCS product information.

### Instrument Specifications

#### Light Sources:

- Up to six CW or pulsed single photon lasers housed in a laser launcher with laser intensity, shutters and single-mode fiber optic output. Wavelengths: 405, 440, 473, 488, 514, 532, 543, 594, 635 and 690 nm
- Multi-photon excitation with computer-controlled beam expander, laser intensity and shutters.

**Microscope:** Inverted or upright microscope (Nikon, Olympus, Zeiss, Leica)

#### Optics:

##### Objectives:

- Air objectives with 20X, 40X, 60X magnification and 1.5-8.1 mm working distances
- Water objectives with 60X magnification and 0.22 mm working distance
- Oil objectives with 60X magnification, 1.4 NA and 0.21 mm working distance

##### Dichroic Filters:

- For single-photon excitation: 1-, 2-, 3-4 band filters
- For multi-photon excitation

##### Polarizer:

- Cube beam splitter, wavelength range: 450-1100 nm; extinction ratio: 10,000:1 at +/- 3 degrees

##### Confocal Pinholes:

- Separate pinholes for each emission channel
- From 12.5  $\mu$ m to 144  $\mu$ m

**Stage:** Large distance movement (100x100x10 mm), stepper motor-controlled XYZ stage

#### Scanning Options:

- Galvanometrically-controlled mirrors
- Piezo-controlled stage

**Sample Holders:** 8-, 96-, and 384-well plates, petri dishes and coverslips

**Light Detectors:** Avalanche photodiodes (APDs) GaAs photomultiplier tubes (PMTs), hybrid PMTs

**Power Requirements:** Universal power input of 110-240 V, 50/60 Hz, 400 VAC

**Dimensions:** 538 mm (L) x 563 mm (W) x 205 mm (H)

**Weight:** 27 kg

Information & specifications are subject to change without notice.



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For more information and a complete list of accessories for Alba v5 please visit [www.iss.com](http://www.iss.com)