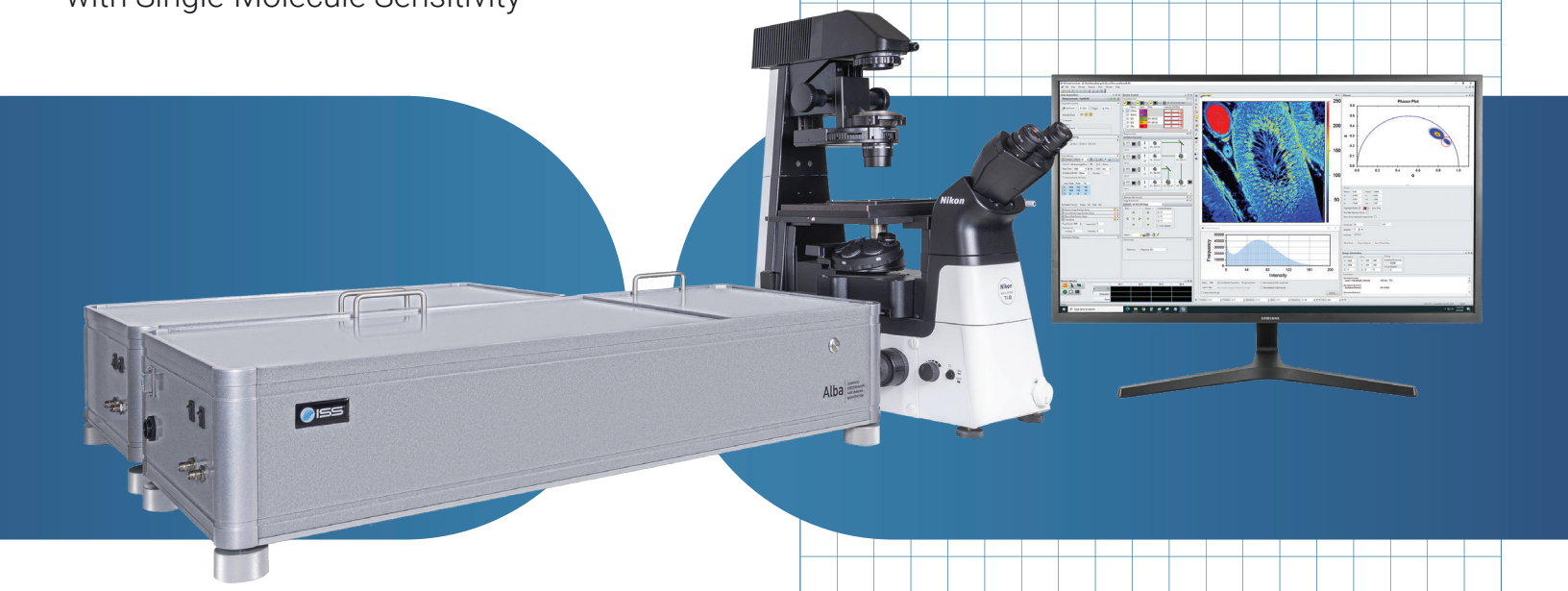
Alba v5

Time-Resolved Confocal Microscope
with Single-Molecule Sensitivity



Alba v5 is a laser scanning microscope that incorporates several measurement modalities for experimental quantitative biology and material sciences applications requiring the single molecule detection sensitivity

User-Friendly Software

Alba v5 includes VistaVision - 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- & Multi-Photon Excitation
- Computer-Controlled Optimization of Optical Elements
- Imaging w/ Galvo Scanning Mirrors or Piezo-Controlled XYZ Stage
- Flexibility & Versatility

Measurement Capabilities:

- FRET & FLIM Images
- Polarization & Ratiometric Images
- Kinetics
- Time-Lapse Recording
- RICS (Raster Scan Image Correlation Spectroscopy)
- N&B (Number & Brightness)
- FCS & FCCS (Auto- & Cross-Correlation)
- FLCS (Fluorescence Lifetime Correlation Spectroscopy
- PCHs (Photon Counting Histograms)
- Fluorescence Polarization FCS
- Scanning FCS
- Particle Tracking

ISS™ focus and discover

Elliot

Software Specifications

VistaVision – FCS & Confocal Imaging Microscopy Software

Alba v5 features VistaVision, 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)

VistaVision 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

VistaVision 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 v5 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

VistaVision 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

Information & specifications are subject to change without notice.

For more information and a complete list of accessories for Alba v5 please visit www.iss.com.

Instrument Specifications

Instrument Features:

- Individual pinholes on each acquisition channel
- Computer-controlled selection of the pinhole variable aperture
- Computer-controlled positioning of the pinhole in the imaging plane
- Single-photon or multi-photon excitation
- Up to 4 channels data acquisition
- Auxiliary port for camera

Microscope: Inverted & upright

Objectives:

- Air objectives w/ 20X, 40X, 60X magnification & 1.5-8.1 working distances
- Oil immersion objectives, 1.4 NA and 60X (standard); other apertures available
- Water immersion objectives,1.2 NA 60X (standard), w/ coverslip correction (for 0.15-0.18 coverslip); other apertures available

Light Sources:

- Single photon lasers housed in a laser launcher w/ computer-control of beam expander, laser intensity &shutter;
- Multi-photon excitation w/ computer-control of beam expander, laser intensity & shutter

Laser Launcher: Models for 3-, 4-, 6-lasers. Light is delivered to the microscope through a single-mode fiber optic

Galvanometer Scanner:

- 2 silver-coated galvanometer scanning mirrors
- Clear optical surface: 3 mm
- Maximum scan rate: 5 KHz for 3 mm
- Scanning resolution: 64 x 64 to 4096 x 4096 pixels
- Scanning mode: Pt, Xt, XZ, XY, XZt, XYt, XYZ
- ROI scanning: rectangle, ellipse, polygon, line

Positioning Controls**:

- ISS 3-axis control unit
- ISS XY galvo scanning mirrors control unit
- ISS Z-piezo control unit
- Microscope built-in focusing control module
- Automatic XY stages (ASI, Prior)
- XYZ piezo stages (MadCity, PI)

Pinhole: Variable-aperture pinhole; diameter from 20 µm to 1000 µm

Detectors:

- Cooled GaAsP & GaAs PMT
- Cooled Hybrid PMTs
- SPADs

Dichroic Filters:

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

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

Data Acquisition Unit:

- FastFLIM (Digital Frequency Domain FLIM)
- SWISS TCSPC card (Time Domain FLIM)

Computer & Monitor:

- High-performance Processor, 32 GB RAM, Windows 10, 64-bit
- 32" monitor, 2556 x 1440 resolution

Power Requirements: 110 - 240 V, 50/60 Hz, 400 VAC

Dimensions (mm): 885 (L) x 600 (W) x 330 (H)

Weight (kg): 40 (with no microscope)

Elliot Scientific Limited
Unit 11 Sandridge Park, Porters Wood,
St Albans, AL3 6PH, United Kingdom
Tel: +44 (0)1582 766300 Fax: +44 (0)1582 766340 www.elliotscientific.com
sales@elliotscientific.com