

Technical Specifications

Microscope	Based on upright Olympus BX51 microscope	
Objective	Plan achromat x10 and x40, other magnifications available. 5 position turret	
Confocal pinhole	4 diameters, from 100 µm to 1000 µm, Motorized, computer-controlled	
Camera		
Color USB CCD	8 bits, 2 Mpix,	
Fluorescence camera (optional)	10 bits, 1.4 Mpix, cooled, low noise in place of standard camera	
Excitation sources	Fiber-coupled pulsed laser sources	
Repetition rate	10 kHz to 100 MHz, with Delta Diode™ sources	
Wavelength range	From 375 to 670 nm	
Motorized stage		
Resolution	0.5 µm	
Travel range	75 x 50 mm	
Manual control	With joystick	
Automatic control	Through DataStation software	
TCSPC Electronics	Single-photon counting detection	
Lifetime range	100 ps to 10 µs (depending on sample)	
Dead time	<10 ns	
Detector	TBX picosecond detection module	
Spectral range	185-650 nm / 250-850 nm	
Transit spread time	<300 ps	
Dark count	< 80 cps	
Filters		
Excitation filters	Optional 10 nm BP filters	
Dichroic filters	4 positions	Motorized, computer-controlled
Emission filters	6 positions: BP or long-pass filters	Motorized, computer-controlled
ND filters	6 positions: 0, 0.3, 0.6, 1, 2 and 3 OD	Motorized, computer-controlled
Software		
Data acquisition	DataStation software	
TCSPC mapping	High-speed scan, down to 5 ms per decay	
Data analysis	DAS6 software, inc. reconvolution feature	
Operating system	Windows XP / Windows Vista	
Dimensions	140 cm x 90 cm x 80 cm	

Why HORIBA Scientific?

Local Support



Who else can give you the service and applications support you need, in order to achieve the total potential from your instrument? HORIBA Scientific has applications laboratories staffed by fluorescence experts in the USA, Europe, and Asia. HORIBA Scientific's affiliates and sister companies are in the UK, Germany, France, Italy, China, Korea, and Japan. Add to this a global network of representatives, and you can rest assured that you will have the support you expect only from HORIBA Scientific. We are part of HORIBA, a \$1 billion company with more than 5000 employees world-wide.

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DynaMyc

Fluorescence Lifetime Mapping Microscope



DynaMyc

Time-resolved Fluorescence On The Micron-Scale

DynaMyc is the ultimate tool to investigate dynamic events in microscopic samples, such as energy transfer and molecular binding. HORIBA Scientific, leader in fluorescence spectroscopy, offers an advanced system to apply time-resolved fluorescence spectroscopy on the micron-scale.

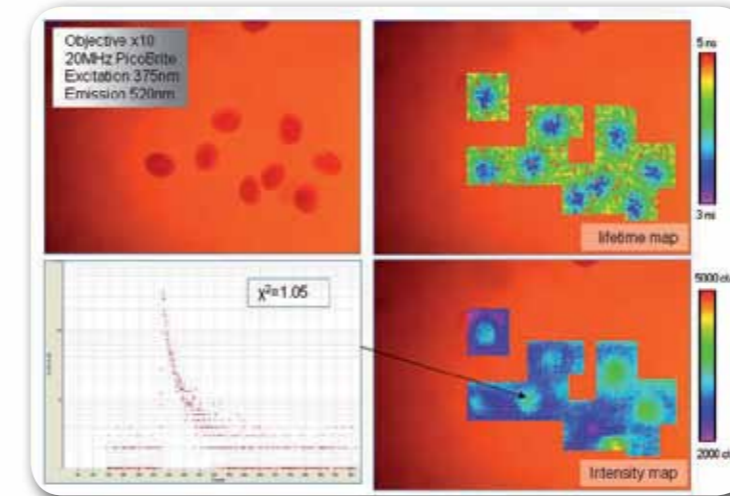
The DynaMyc is an automated, confocal microscope featuring the precision and sensitivity of Time-Correlated Single-Photon Counting (TCSPC). Its FLIM capabilities include an automated X,Y fast scanning stage, which, combined with its confocal ability, can generate fluorescence lifetime mapping with a spatial resolution at micron level.

The DynaMyc is a flexible research grade tool that combines a large range of picosecond pulsed laser diode sources (spanning wavelengths from 375 to 670 nm), multiple filter configurations and various detector options to suit your needs. Its imaging capabilities include a CCD camera for the definition of the area of interest, with direct fluorescence imaging possible using an optional high dynamic range low noise cooled camera. The DynaMyc is fully-automated and controlled from the intuitive user interface of our DataStation software. Full reconvolution analysis can be performed to generate maps of the fit parameters such as lifetimes, pre-exponential, average lifetime, and fluorescence intensity.



Applications

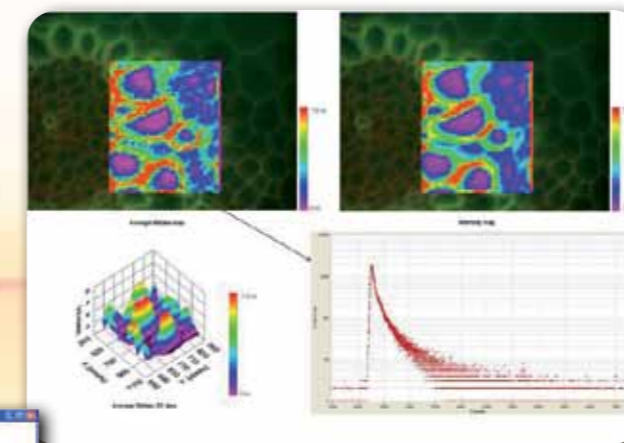
- Biological as well as material science samples
- Cell and tissue analysis
- Intrinsic fluorescence
- Conjugated fluorescence labels and quantum dots
- Thin films and semiconductors
- Fluorescence dyes
- Nanoparticles
- Quantum dots
- FRET



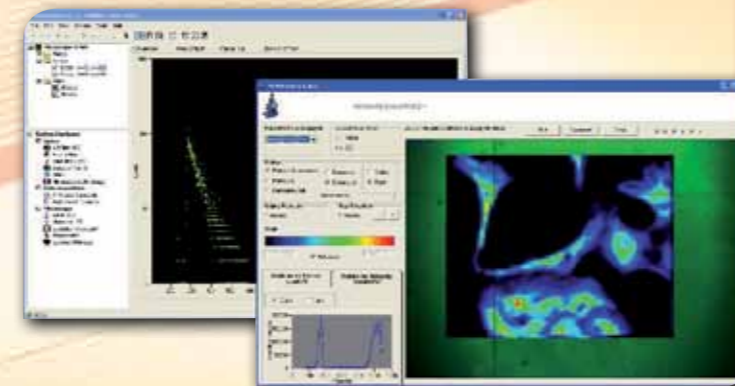
Example: Lifetime imaging on Lilly pollen grain

Unique Features

- Fully-automated system with fiber coupling, confocal head unit and single-photon counting module
- Lifetime determination from 100 ps to 10 μ s
- New Delta Diodes™ high repetition rate lasers, CW or pulsed operation
- Intuitive data acquisition and analysis software
- Optional cooled fluorescence camera
- Fast mapping speed (data in seconds)
- Widefield steady state fluorescence for comparative studies



Example: Lifetime and fluorescence intensity imaging on convallaria sample



DataStation software: mapping of BPAE cells

Components

FluoroHub

Time-correlated single photon module

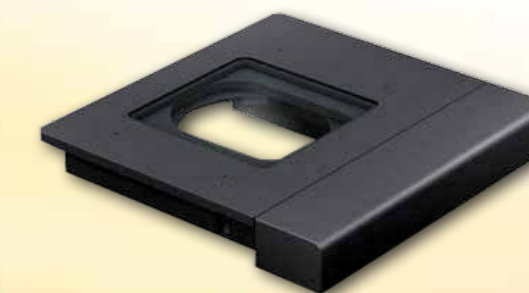


Delta Diode™ sources

Repetition rate up to 100 MHz	
375 nm	485 nm
405 nm	510 nm
415 nm	635 nm
440 nm	650 nm
450 nm	670 nm
470 nm	

TBX series detectors

Spectral response:
185 nm-650 nm / 250 nm-850 nm
Dark counts < 80 cps



X-Y-Z motorized stage

Automated X-Y-Z stage
0.5 μ m resolution