Photonscore LINCam

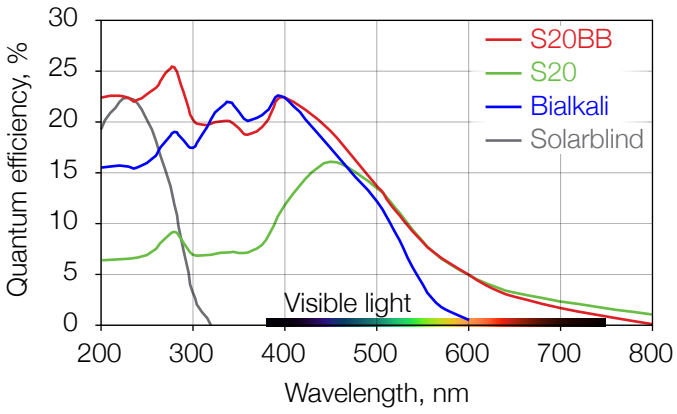
Single photon counting camera.

LINCam is a solution for scanning-free time correlated single photon counting implemented as a camera. This camera resolves x and y positions of individual photons as precise as a CCD with 1000 × 1000 pixels does together with 50 ps accuracy timing. Being paired with a pulsed light source LINCam turns any conventional fluorescence microscope into a powerful lifetime measuring instrument. LINCam with attached off-the-shelf optics is a solution for macroscopic applications like LIDAR.
In other words, LINCam is just a camera. As easy as an ordinal megapixel CCD camera but extended with the timing dimension.

LINCam25 with C-mount

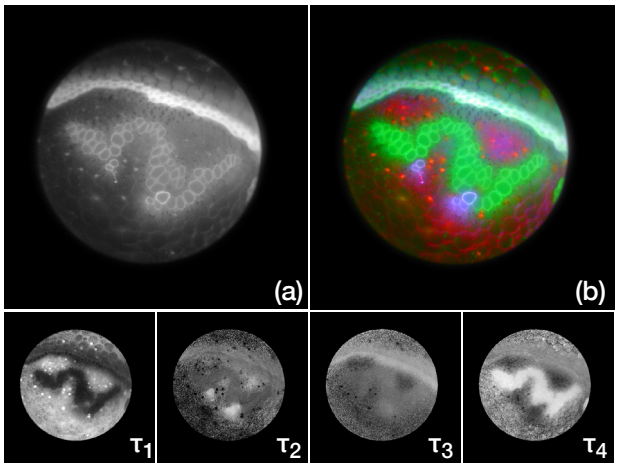
LINCam40 with T-mount

Spectral sensitivity



Example image

Fluorescence lifetime measurement of a lily of the valley slice sample. The intensity image **(a)** is a histogram of the positions of acquired photons. Lifetime analysis* reveals four lifetime components: τ_1 = 0,19; τ_2 = 0,67; τ_3 = 1,95 and τ_4 = 3,75 ns. The resulting overlay image **(b)** of the intensity image and average lifetime is shown.



* by maximum entropy method (MEM)

Applications

- Fluorescence lifetime imaging (FLIM)
- Light-sheet 3D FLIM
- Time resolved Raman spectroscopy
- Time-of-Flight measurements
- Low-light observations

Acquisition system

Universal electronics and software for LINCam25 and LINCam40.

Detector

	LINCam25	LINCam40
Active area diameter, mm	25	40
Positional resolution, pixels	1000 × 1000	
Temporal resolution, ps FWHM	≤ 50	
Microscope mount	C-mount	T-mount
Housing dimentions, mm	145 × 78 × 50	145 × 100 × 53
Weight, g	500	600
Cooling	Low noise Air or Liquid	

Acquisition system

Maximal count rate, MHz	1
Dead time, ns	400
Timing	
Method	TAC + ADC
Minimum bin width, ps	≤ 1,4
Electrical resolution, ps	6
Number of bins	4096
Reference input	Positive or negative NIM
Time tagging resolution, ns	10
Computer interface	USB 2.0
Operating system	Windows 7/10 64 Bit