

Photonscore LINCcam

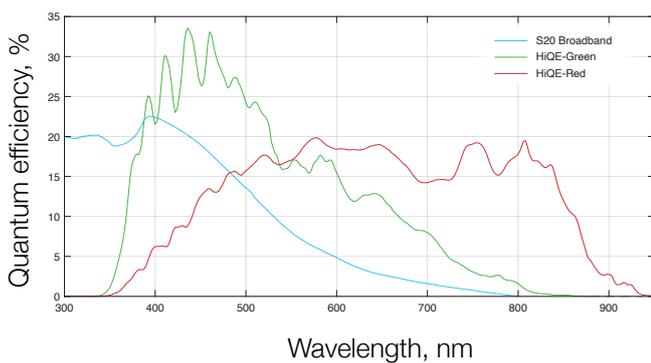
Single photon counting camera.

LINCcam 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 40 ps accuracy timing. Being paired with a pulsed light source LINCcam turns any conventional fluorescence microscope into a powerful lifetime measuring instrument. LINCcam with attached off-the-shelf optics is a solution for macroscopic applications like LIDAR. In other words, LINCcam is just a camera. As easy as an ordinal megapixel CCD camera but extended with the timing dimension.



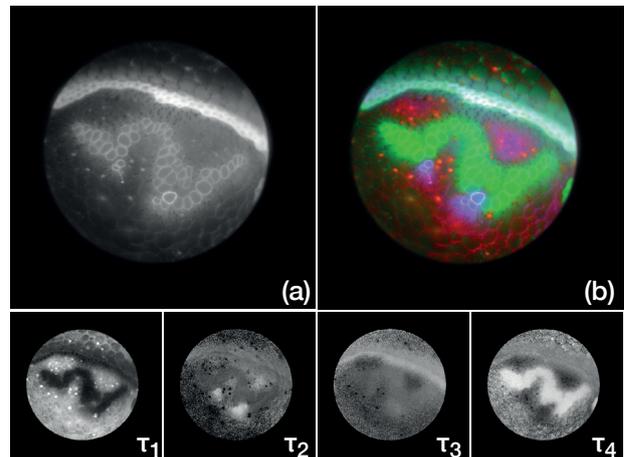
LINCcam with C-mount

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: $\tau_1 = 0,19$; $\tau_2 = 0,67$; $\tau_3 = 1,95$ and $\tau_4 = 3,75$ 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 LINCcam.



Detector

	LINCcam
Active area diameter, mm	17
Positional resolution, pixels	1000 × 1000
Temporal resolution, ps FWHM	≤ 40
Microscope mount	C-mount
Housing dimensions, mm	145 × 78 × 50
Weight, g	500
Cooling	Liquid cooling

Acquisition system

Maximal count rate, MHz	1
Dead time, ns	400
Timing	
Method	TAC + ADC
Minimum bin width, ps	1
Electrical resolution, ps, FWHM	7
Number of bins	4096
Reference input	Positive or negative NIM
Time tagging resolution, ns	10
Computer interface	USB 3.0/Ethernet
Operating system	Windows 7/10/11 64 Bit