

TCSPC Camera

Easy to Use as an Ordinal Megapixel CCD Camera

Spatial Resolution ~ 1000 x 1000 Pixels

Temporal Resolution (IRF Width) 40 ps FWHM

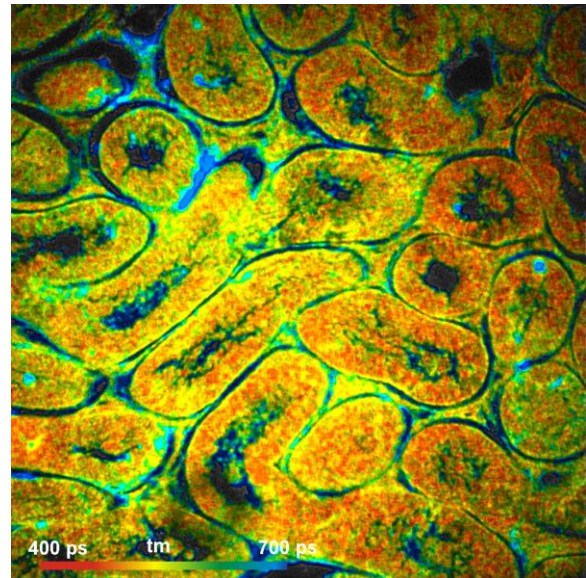
Saturated Count Rate up to 1 MHz

Works with Common Microscope Types

Standard C-Mount Adapter



Intensity image of rabbit tissue

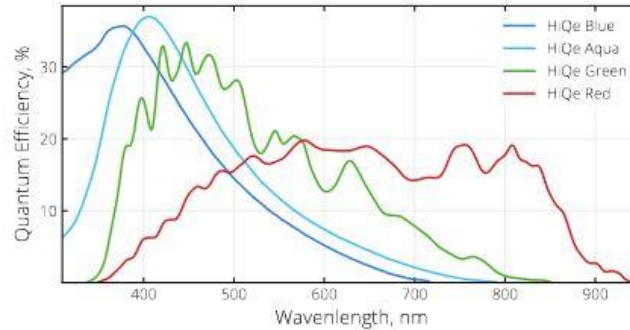
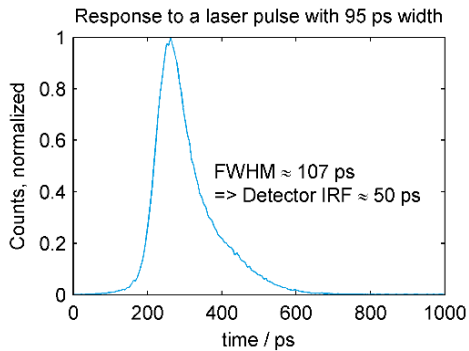


FLIM image of rabbit tissue.

The LINCcam system grants single photon acquisition in a wide-field photon counting mode. The core of the system is a position sensitive photomultiplier tube (PMT) based on microchannel plates (MPC's) with a multi-alkali photocathode.

The system comprises of the detector head and the electronic control module designed to be used in lab conditions. The detector head houses MCP-PMT preamplifiers, high-voltage power suppliers and the cooling system. Provided integrated electronic control module includes everything required for robust and reliable single photon counting based imaging. Real-time event selection logic processes registered photons to avoid artifacts like multi-photon events, MCP noise and pile-up effect. The LINCcam records the full single photons stream for flexible data analysis. Virtually any spatial and temporal binning can be applied. Frame time can be set to virtually any value to create flexible time lapse movies.

The 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 x 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 for fluorescence lifetime imaging, time-of-flight-measurements, low-light observations and X-Ray tomography. LINCcam with attached off-the-shelf optics is a solution for macroscopic applications like LIDAR. LINCcam is as easy as an ordinal megapixel CCD camera but extended with the third timing dimension.



Specifications

Detector

Active Area Diameter	17 mm
Spatial Resolution, Pixels	1000 x 1000
Temporal Resolution (IRF Width)	40 ps (FWHM)
Dark Count Rate	<15 Hz (Blue,Aqua), <50 Hz (Green), <200 Hz (Red)
Mount	C-Mount
Dimensions (Width x Height x Depth)	145 mm x 78 mm x 50 mm
Cooling	Integrated Water Cooling

Acquisition System

Max. Count Rate	>1 MHz
Dead Time	<250 ns
Timing Method	FPGA based TDC
Timing Jitter (FWHM)	<8.5 ps
Digital Bin Size	1 ps
Number of Bins / Timing Window	Up to 100 000 / 100 ns
Reference / Sync Input	Positive or Negative NIM
Computer Interface	USB 3.0
Operating System	Windows 10/11 64 Bit

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