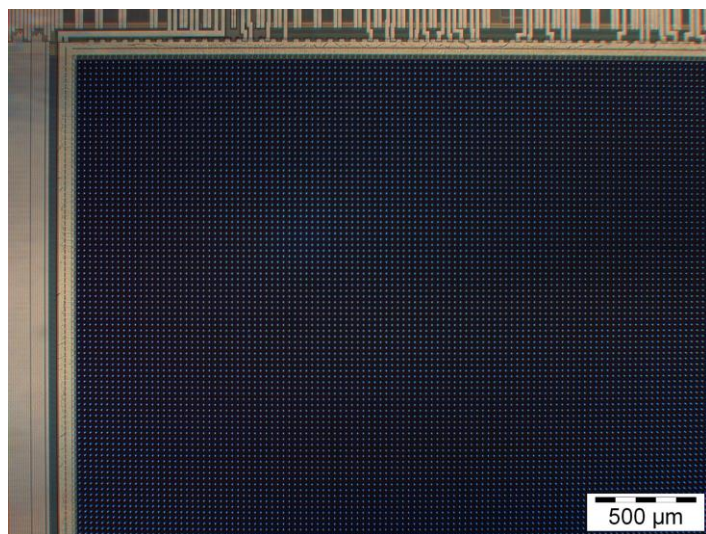


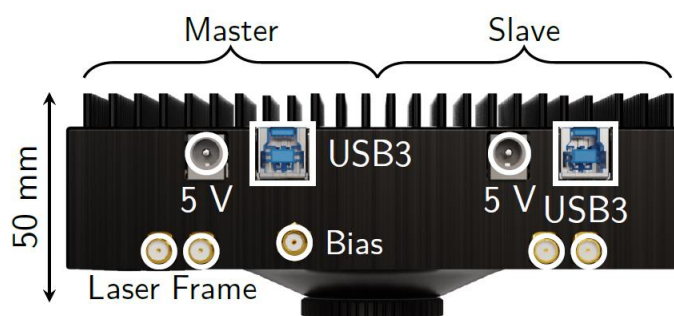
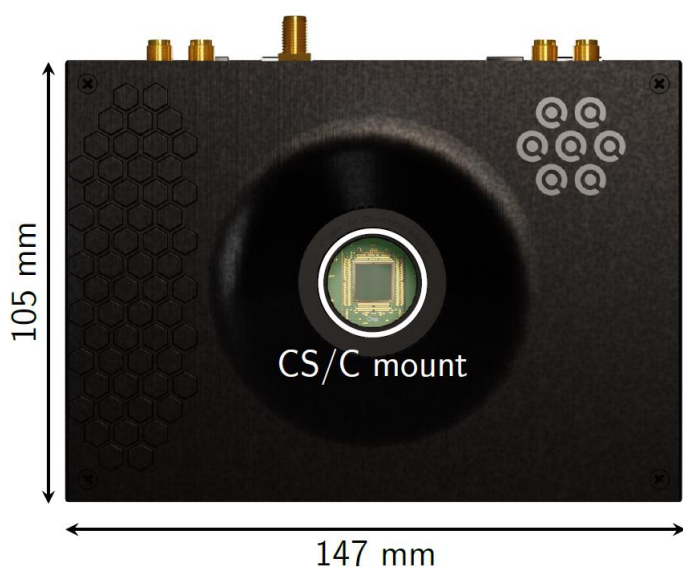
Overview

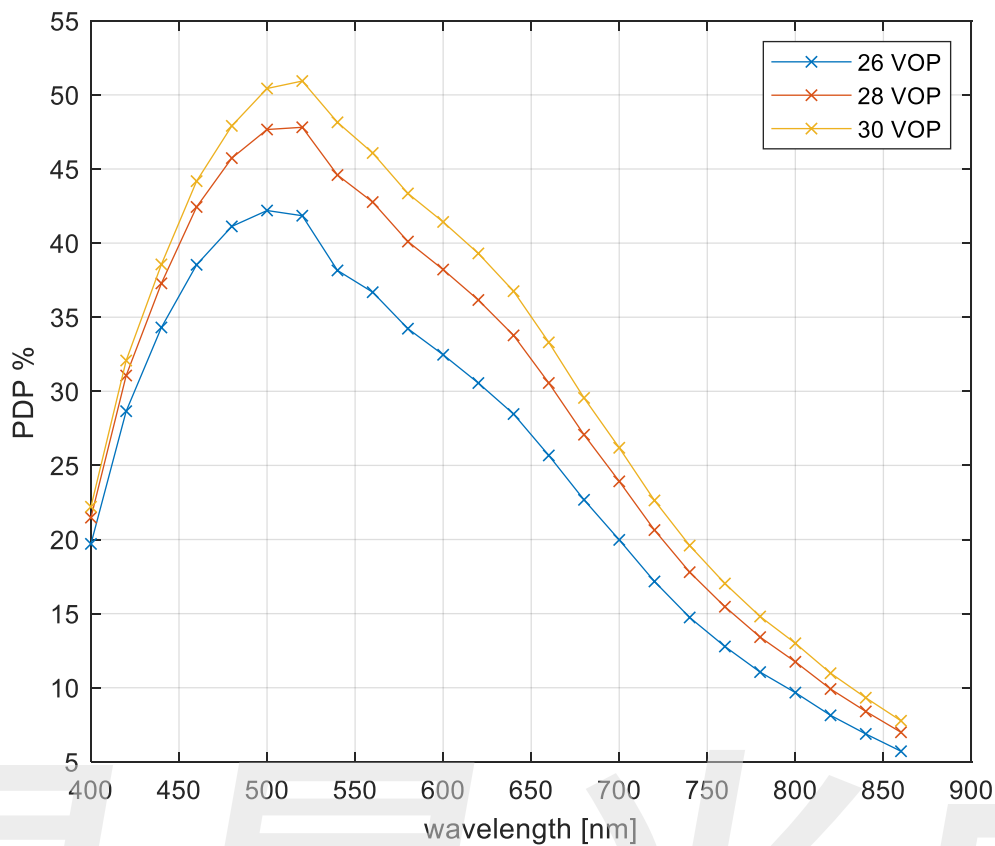
SPAD512² is a single-photon avalanche diode image sensor with 512×512 pixels. It enables photon counting with up to 100,000 frames per second and zero readout noise.

The global shutter enables nanosecond exposures with exposure shifts of 18 ps. The array is optimized for low noise, with a typical dark count rate of less than 25 cps.



Sensor	SPAD images sensor with in-pixel gate
Image array	512 × 512
Sensor wavelength range	400 to 900 nm
Peak photon detection probability	50% @ 520 nm
Fill factor without microlenses	10.5%
Fill factor with microlenses	30-40% for collimated light
Median dark count rate	25 cps
Percentage of pixels with >1 kcps	1%
Frame rate (max.)	100,000 fps @ 1-bit for 1 s 5,000 fps @ 4-bit continuous 400 fps @ 8-bit continuous
Maximal total count rate	Up to 26214.4 Mcps
Maximal pixel count rate	100 kcps
Minimum exposure	15 ns
Minimum exposure shift	18 ps
Exposure rise / fall time	300 ps / 800 ps
Connection type	C-mount





Photon detection probability.

