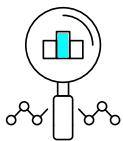


Company overview

Singular Photonics, a company with deep roots from the world leading University of Edinburgh CMOS Sensors and Systems group, are bringing to market the next generation of sensors based on single photon avalanche diodes (SPADs). These sensors can detect and time single photons (light quanta) enabling simultaneous capture of depth and temporal dimensions generating 4D images.

Why choose us



Deep industry experience

Our founding team have over 60 years combined industry and academic expertise in the design of SPAD sensors.



Innovation

We are committed to providing innovative solutions that will help create a better tomorrow for everyone.



Integration

Our solutions are designed to seamlessly integrate into your solution.

Overview



Andarta

- 2D Array
- 3D Stacked
- BSI SPADs

Why SPAD arrays?

- CMOS integration
- Low DCR
- Single Photon Sensitive
- Room Temperature Operation

Applications

- Time gated FLIM
- Diffuse Correlation Spectroscopy
- Time gated Raman
- Fluorescence Correlation Spectroscopy
- Ultra high speed imaging
- Microscopy

Modes

- Photon counting (Rolling / Global shutter)
- Autocorrelation
- Time gated
- Burst

Software & Firmware

- Universal API
- Integration with LabView, Matlab, Python and other languages

Andarta

Technical Specifications



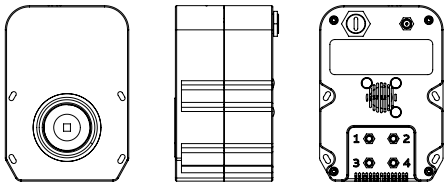
Andarta Sensor

Detector Type	CMOS SPAD
Technology	65 nm / 40 nm (BSI Stacked)
Sensor Dimension	5 mm x 5 mm
Peak Detection Efficiency	47% @ 785 nm (see plot below)
Fill Factor	100% (with micro lenses)
Median dark count rate	500 cps Reverse bias = 23V @ 25 Degree C
Dead Time	4.3 ns
Pixel Array/Macro Pixels	512 x 512 / 128 x 128
Pixel Pitch	10.17 μ m



Dimensions and Mounting

- Camera Unit WxHxD:** 102 mm x 145 mm x 85.25 mm
- Clear Aperture:** 22 mm diameter
- Mounting Options:**
- 4x M4 screws in through holes
 - 1x 1/4"-20 (M6) bottom thread
- Optional Accessories:**
- 20 mm diameter protective window
 - C or CS mount lens



Data Handling

- Data Compression:** Yes
- Data rate (Mpix/s):** 3.6E+10 (Burst)
1.6E+07 (Continuous)
- DCS Frame Rate:** 40 fps
- Ensemble DCS Rate:** 27,000 fps
- Burst length:** 32
- Max frame rate:** 1 Kfps (Continuous)

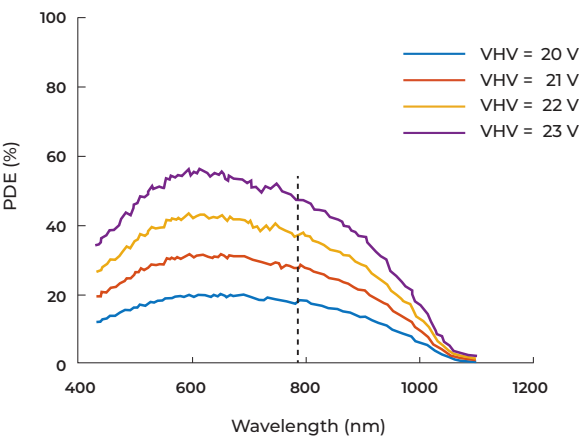


Timing and Control

Timing Function	Gated
Timing Jitter	350 ps
Time Resolution	30 ps (minimum)
On-chip Delay Generator	Yes
Counting	Intensity mode : 22 bit Burst mode : 5 bit



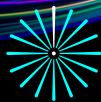
Photon Detection Efficiency



Interfaces

- Power:** 12 V
AC / DC brick provided
- Data Connection:** USB-C
- Synchronisation ports:** 4 (Factory configurable TTL/NIM)

Datasheets are subject to change



Singular™
Photonics

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We recognise the importance of our **PEOPLE**
We strive for **EXCELLENCE**
We operate with **INTEGRITY**
We deliver **RESULTS**