



## Single-photon SPAD Detector



Our USB-powered fiber-coupled single-photon SPAD detector is specifically engineered for time-resolved fluorescence lifetime imaging and spectroscopy measurements. Thanks to its portable and light-weight format it allows time-tagging with no precedent.

### KEY SPECS

- Single-Photon Avalanche Diode technology
- Portable
- Desktop-size-compact: 100x60x30mm
- USB-powered
- Light weight: 235g
- TE-cooled sensor
- FC/PC fiber-coupled sensor
- B2C or B2B selling options

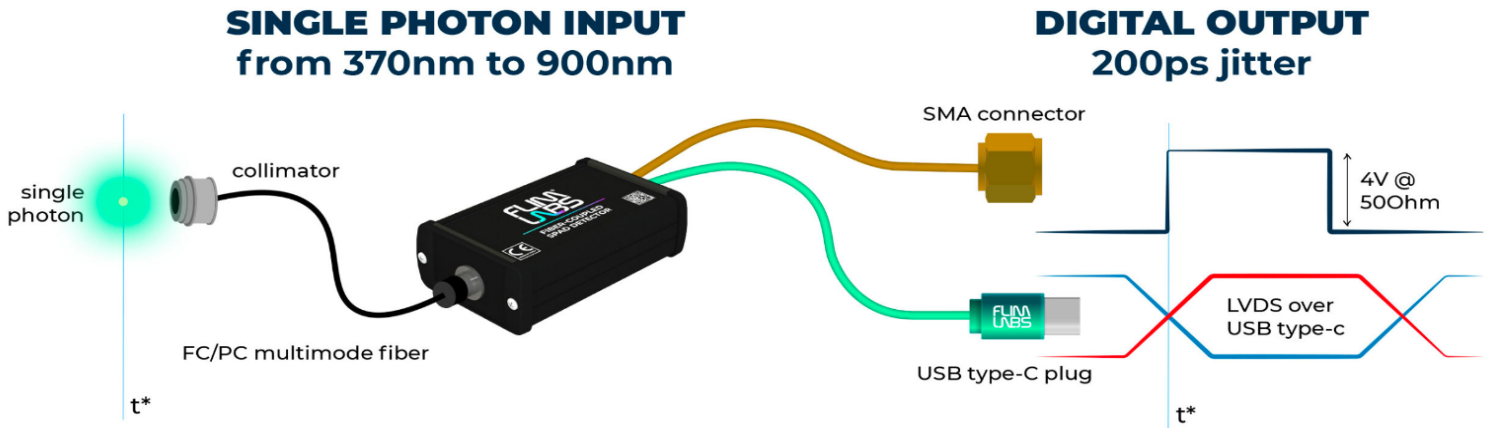
### Included in the price

- Wall-mount DC converter
- USB type-C power cable
- SMA coaxial cable
- USB type-C LVDS signal cable
- FC/PC MultiMode fiber patch cord

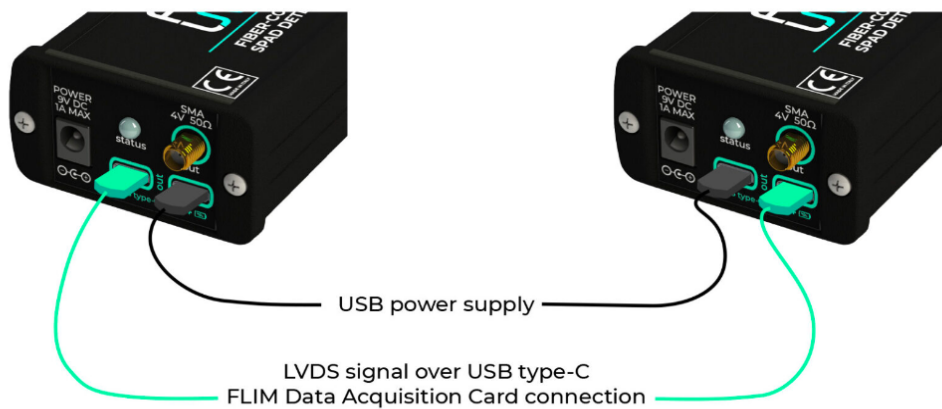
### MAIN TECH-SPECS

- Spectral response range from 370nm to 900nm
- Peak sensitivity at 450nm
- 7 cps dark count
- < 200ps jitter
- 50  $\mu$ m photosensitive area
- Digital LVTTTL 4V @ 50Ohm and LVDS output

## Main Function



## POWER SUPPLY AND USB type-C SIGNAL INTERFACE



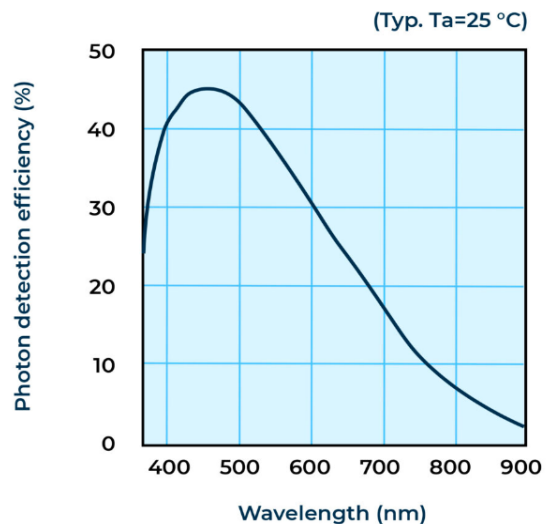
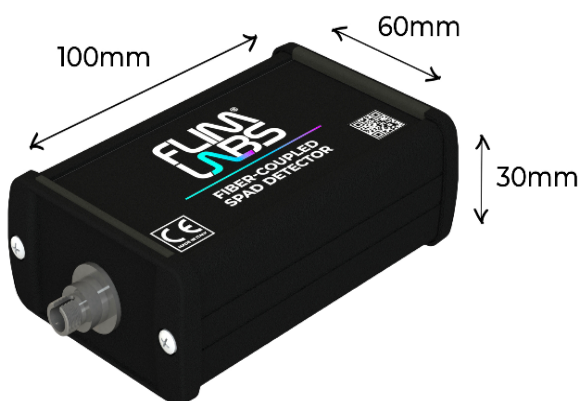
## MAIN FEATURES

Our fiber-coupled SPAD detector is specifically designed for pursuing fluorescence lifetime imaging and spectroscopy measurements. Thanks to its capability of being powered via a standard USB port, it will introduce a new paradigm for fluorescence lifetime-based applications, where it can be deployed with minimal effort in any type of environment.

### Compactness

Compact dimensions (100x60x30mm) and lightweight (235g) allows for extreme portability. Furthermore, capable of also being USB-powered our SPAD detector could be used in a portable setup or even outdoors.

### Photon detection efficiency vs. wavelength

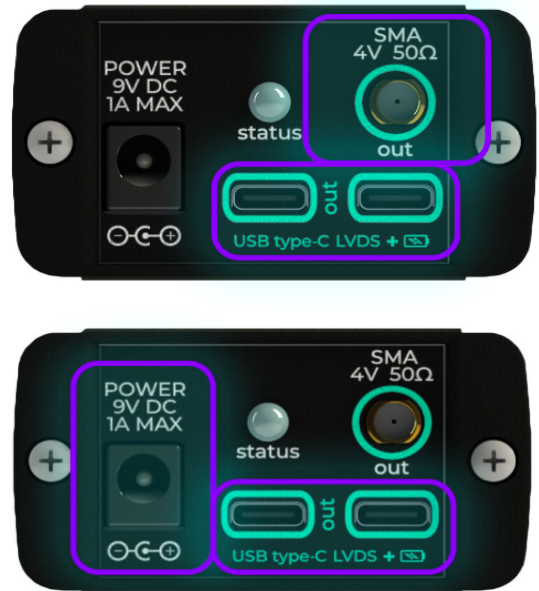
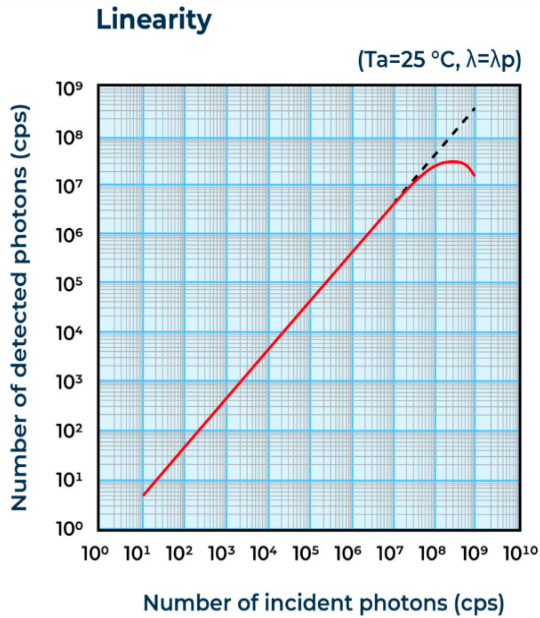


## Spectral Response

The sensitivity of our SPAD detector peaks at 450nm, while its spectral response range spans from 370nm to 900 nm.

## Key tech specs

Our fiber-coupled USB-powered SPAD detector yields a <200 ps timing jitter coupled with 7cps of dark count rate. The throughput linearity is maintained up to 3.5Mcounts/s of incident photons.



## Interface and connection type

Our SPAD detector has a SMA coaxial connector for a LVTTTL 50 Ohm interface, working in a parallel and independent way together with orientation independent USB type-C ports for communicating over a proprietary FLIM LABS LVDS protocol with the [FLIM Data Acquisition Card](#). USB type-C connector allows for user-friendly and low-cost interfacing as well as powering the SPAD.

## Power Supply

The 2 options available for the power supply allow for flexible powering the SPAD detector via standard USB port or via a 2.1/5.5 mm coaxial connector using a wall-mount DC converter (recommended values are 9 V DC – 1 A max).



## Fiber coupling

FC/PC fiber coupling offers flexibility for using our SPAD detector in any type of context boosting, together with USB powering, its adaptability for a plethora of different applications.

## LED Status

A LED light is always there for providing real time feedback on the correct functioning of the SPAD detector.

## FULL SPECS

Technology	Single-Photon Avalanche Diode (SPAD)
Spectral response range	370nm + 900nm
Peak sensitivity ( $\lambda_p$ )	450nm
Dark count	7cps
Timing jitter	< 200ps
Photosensitive area	50 $\mu$ m
Fiber connector	FC type
Maximum light incident level	50 $\mu$ W
Maximum photon counts throughput	Linear response up to 3.5MCounts/s
Output interface	LVTTTL 4V@50 Ohm over the SMA connector LVDS over the USB-type C ports (FLIM LABS proprietary interface)
Operating temperature	-10 + +40 °C
Storage temperature	-20 + +70 °C
Power supply	USB powered or 9V DC-1 A max via the 2.1/5.5 mm coaxial connector
Dimensions	100x60x30mm
Weight	235g