# SPD_A_VIS

# VIS Single Photon Detector

## Dual-mode photon counting complete solution [400 nm - 1060 nm]


The SPD_A_VIS photon counter brings a major breakthrough for single photon detection in the 400 nm to 1,060 nm visible range. Built on cooled silicon Geiger-mode single photon avalanche photodiode technology **the SPD_A_VIS is the first generation of visible single photon detector that performs both synchronous "gated" and asynchronous "free-running" detection modes.** Based on a table-top design, the SPD_A_VIS is a complete detection solution which does not require any additionnal bulky and expensive cooling systems or control units.

Very well-designed, the outstanding-performances and the modern interfaces make the SPD_A_VIS photon counter an essential analytic tool for any low level of light measurements!

## Features

- Dual free-running/gated mode
- 1 or 2 independant channels
- High detection efficiency
- Master/Slave operation
- Adjustable gate parameters
- User friendly graphical interface
- Remote control
- DLL Libraries : LabVIEW, C++
- Read out in TTL

## Applications

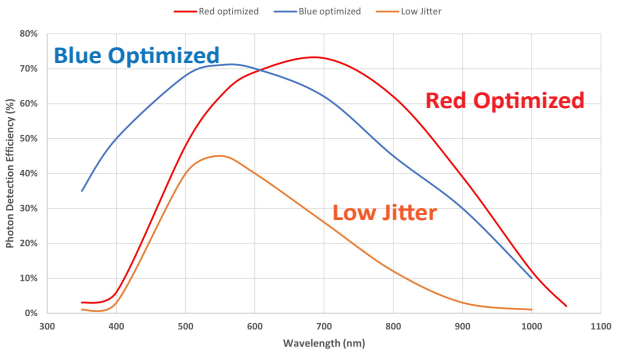
- TCSPC measurements
- FLIM microscopy
- Coïncidence measurements
- Geiger-mode Lidar
- Optical fiber sensing
- Quantum cryptography
- Particule sizing

## Options

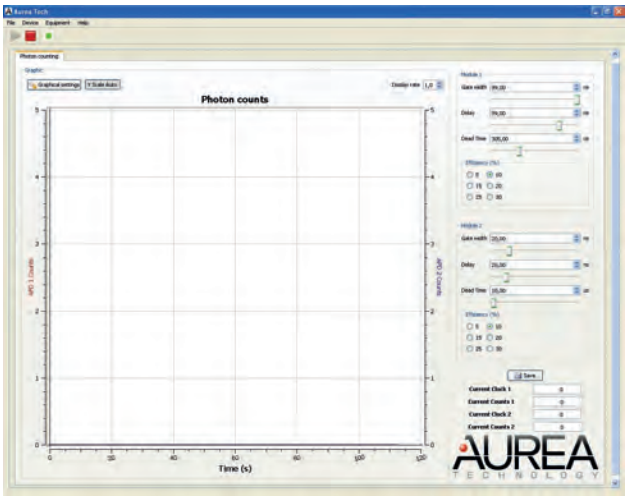
- Low timing jitter
- Red optimized
- Blue optimized

## TECHNICAL SPECIFICATIONS

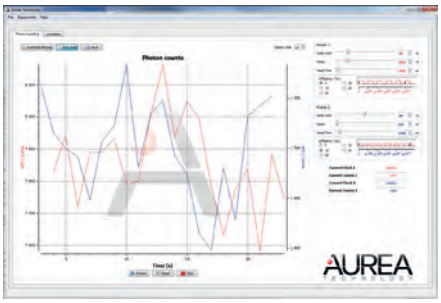
| Single Photon Counting - Typical values | |
|---|---|
| **Spectral Range** | 400 nm to 1060 nm (Silicon APD) |
| **Optical Fiber type** | SMF (9µm) or MMF (50µm, 62µm and 100µm) |
| **Dark Count Rate** | Grade A < 25 cps<br>Grade B < 50 cps<br>Grade C < 100 cps<br>Grade D < 250 cps<br>Grade E < 500 cps |
| **Detection Efficiency** | > 65% @700 nm |
| **Timing Jitter** | < 350 ps (< 50 ps in option) |
| **Min Dead Time** | 20 ns - 40 ns |
| **Free-running mode** | |
| **Max Count Rate** | 40 Mcounts/s |
| **Gated mode** | |
| **External trigger** | From CW up to 20 MHz |
| **Internal trigger** | From CW up to 20 MHz |
| **Effective gate width** | From 1 ns up to 100 ns [0.5 ns step] |
| **Trigger delay** | From 0 up to 128 ns [0.5 ns step] |
| **Input/Output - Mechanical - Environmental** | |
| **Computer Connection** | Mini USB 2.0 type B |
| **Optical In** | FC/PC or FC/APC optical fiber connector |
| **Detection Out** | SMA female type connector (TTL) |
| **Clock In** | SMA female type connector (TTL) |
| **Clock Out** | SMA female type connector (TTL) |
| **Power consumption** | 5W |
| **Dimensions (LxWxH)** | 70 x 250 x 280 mm³ |
| **Weight** | 4.5 kg |
| **Operating temperature** | + 10°C to + 30°C |
| **Cooling time** | < 1 min @ 25°C |




*QE vs Wavelength*




*Graphical User Interface*




A user-friendly Graphical User Interface is provided. It allows the set-up of the QE, gate width, delays, deadtime, and also the display of the photon count, the clock, the temperature and the alarm to protect against accidental overload. The DLL libraries compatible to the most well-known programming languages are also provided.

## RELATED PRODUCTS

AUREA Technology also provides high performance TCSPC and picosecond laser sources from 375 nm to 1990 nm.

*PIXEA picosecond laser source*

## ORDERING INFORMATION

**SPD_A_VIS_MX_YY_ZZ**

- MX — M1: 1 channel; M2: 2 channels
- YY — SM: Single Mode Optical Fiber; MM: Multimode Optical Fiber
- ZZ — 01: FC/PC; other type on request
- A — Standard version
- AT — Low timing jitter

**Please contact us for custom solutions and options**

## NOTE



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