The SPD_A_NIR photon counter brings a major breakthrough for single photon detection in the 900 nm to 1700 nm near infrared range. Built on cooled InGaAs/InP Geiger-mode single photon avalanche photodiode technology the SPD_A_NIR is the first generation of NIR single photon detector that performs both synchronous "gated" and asynchronous "free-running" detection modes. Based on a table-top design, the SPD_A_NIR is a complete detection solution which does not require any additional bulky and expensive cooling systems or control units.

Two DCR noises grades are available: the Standard and the Champion grade. The Champion offers very-low-noise DCR < 1000 cps and high Quantum Efficiency up to 30%, fast timing resolution of 180 ps and low afterpulsing rates < 0.1%.

Very well-designed, the compactness and its modern interfaces make the SPD_A_NIR your essential analytical tool for the most demanding academic and industrial research.

**Features**
- Dual free-running/gated mode
- 1 or 2 independent channels
- Detection Efficiency up to 30%
- Adjustable gate parameters
- Master/Slave operation
- User-friendly graphical interface
- Remote control
- DLL Libraries: LabVIEW, C++
- Read out in TTL

**Applications**
- Quantum cryptography
- Lifetime measurements
- Photon source characterization
- TCSPC measurements
- High resolution OTDR
- Optical fiber sensing
- Geiger-mode Lidar

**Options**
- Standard grade
- Champion grade
### TECHNICAL SPECIFICATIONS

- **Spectral Range**: 900 nm to 1700 nm
- **Optical Fiber type**: SMF or MMF

<table>
<thead>
<tr>
<th>Grade</th>
<th>Standard</th>
<th>Champion</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dark Count Rate</strong>@10%QE</td>
<td>&lt; 5,000 cps</td>
<td>&lt; 1,000 cps</td>
</tr>
<tr>
<td><strong>Detection Efficiency</strong></td>
<td>10% - 25% [5% step]</td>
<td>10% - 30% [10% step]</td>
</tr>
<tr>
<td><strong>Timing Jitter</strong> @max QE</td>
<td>200 ps</td>
<td>180 ps</td>
</tr>
<tr>
<td><strong>Deadtime range</strong>@10%QE</td>
<td>from 1 μs to 1 ms</td>
<td>from 100 ns to 1 ms</td>
</tr>
<tr>
<td><strong>Afterpulsing probability</strong>¹</td>
<td>&lt; 1%</td>
<td>&lt; 0.1%</td>
</tr>
</tbody>
</table>

### Timing Jitter (ps) vs QE (%)

**Synchronisation - Gate**

- **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]

### Computer Connection

- **Input**: Mini USB 2.0 type B
- **Output**: FC/PC or FC/APC optical fiber connector
- **Clock**: SMA female type connector (TTL)
- **Power consumption**: 5 W
- **Dimension (LxWxH)**: 70 x 250 x 280 mm³
- **Weight**: 4.5 kg
- **Operating temperature**: +10°C to +30°C
- **Cooling time**: < 1 min @ 25°C

### Ordering Information

- **SPD_A_NIR_MX_XX_YY**
  - MX: Single Mode optical fiber
  - XX: Multi Mode optical fiber
  - YY: 01: FC/PC
  - Other type on request

- **A**: Standard grade
- **AC**: Champion grade

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**

### DISCLAIMER

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