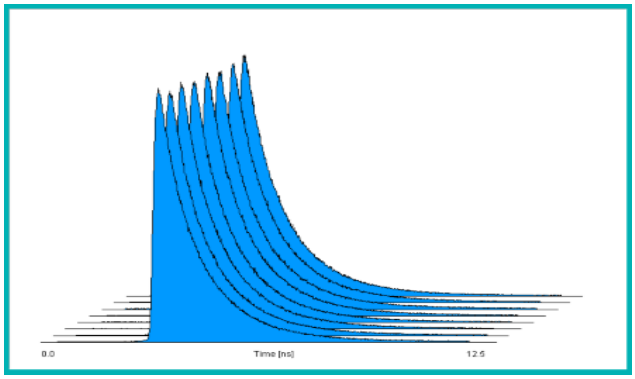
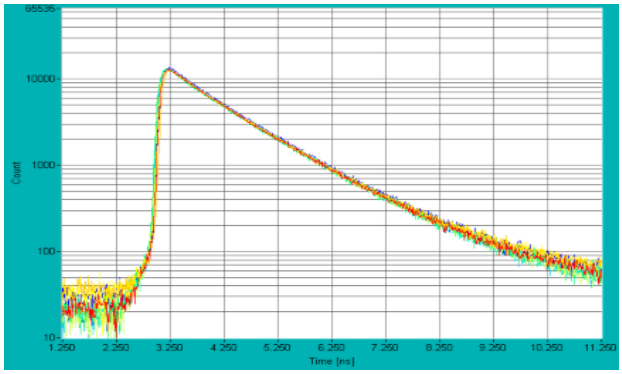
SPAD-8

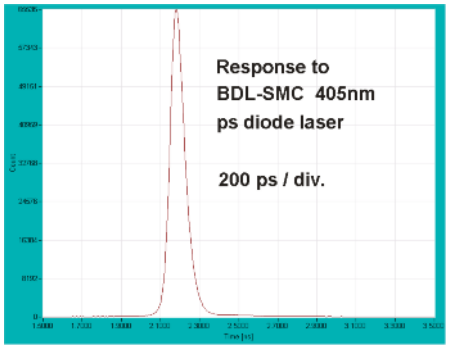
8-Channel SPAD Module

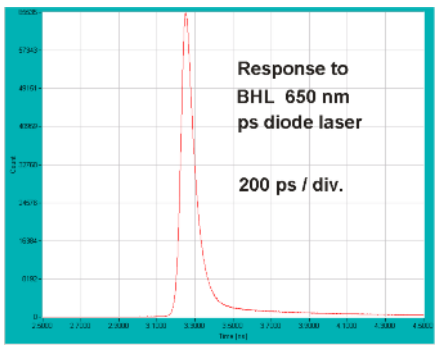
8-channel SPAD detector module
bh multi-dimensional TCSPC technique
Interfaces directly to all bh TCSPC systems
Simultaneous measurement in all 8 channels
1 x 8 arrangement of detector channels
Instrument response width 70 ps FWHM
Max. count rate > 5 MHz
Thermo-electrically cooled
Power supply and control via bh DCC-100 detector controller card

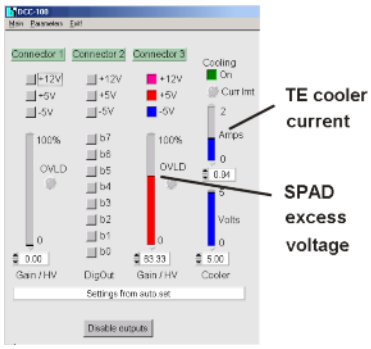
The SPAD-8 module contains eight actively quenched SPAD pixels on a single silicon chip. The signals of the SPADs are recorded by a single bh TCSPC module. The module uses bh's multi-dimensional TCSPC technique. For each photon, the SPAD-8 delivers a timing pulse and the number of the SPAD pixel that detected the photon. The TCSPC module builds up a photon distribution versus time and pixel number, or stores the individual events as time-tag data. The technique avoids any time gating or detector multiplexing and thus achieves a near-ideal counting efficiency. Power supply, SPAD excess-voltage control, an current for the TE cooler are provided by a bh DCC-100 detector controller card.











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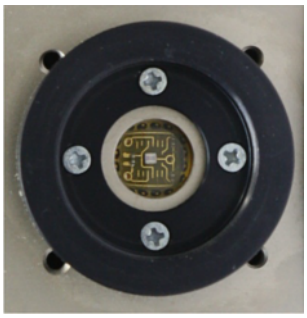
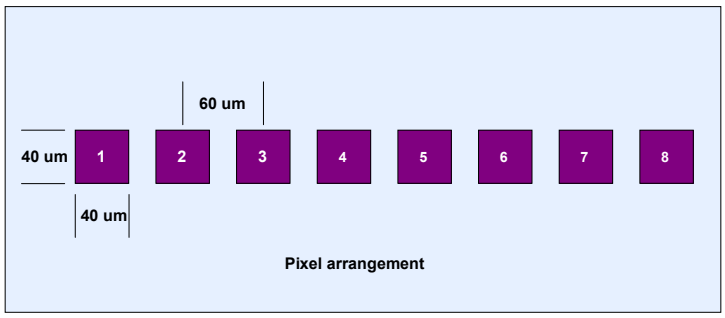
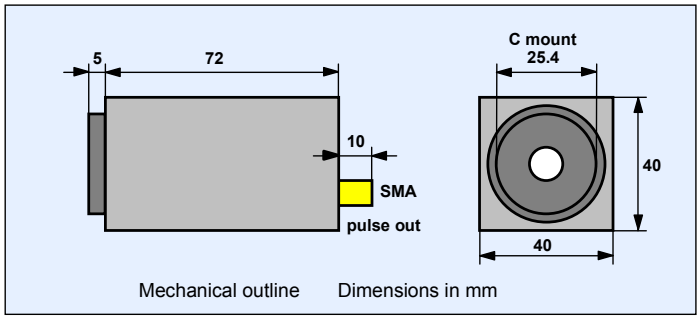
SPAD-8

Specifications

Number of pixels	8
Pixel arrangement	1 by 8
Active area (each pixel)	40 x 40 µm
Pixel pitch, centre-centre	60 µm
Optical adapter	C mount
Spectral response	350 to 900 nm
Peak quantum efficiency, 500 nm	35 %
Channel uniformity	5%
Dark count rate, per channel	< 1000, TE cooler current 0.5A
IRF width, fwhm	70 ps (typical value)
Time skew between Channels	< 150 ps
Dead time	50 ns
Timing Output	SMA, 50Ω, negative pulse
Routing Signal	3 bit + Error Signal, TTL/CMOS
Power Supply	From bh DCC-100 card
Dimensions	40 mm × 40 mm × 72 mm







Related Products

SPC-130 EM TCSPC modules	Simple-Tau 130 compact TCSPC systems	DCC-100 detector controller
SPC-150 TCSPC modules	Simple-Tau 150 compact TCSPC systems	PML-SPEC and MW-FLIM multi-wavelength detectors
SPC-830 TCSPC modules	Simple-Tau 830 compact TCSPC systems	id-100 SPAD detector modules
SPC-630 TCSPC modules	FLIM systems for laser scanning microscopy	BDL-SMC and BHLP picosecond diode lasers

Related Literature

W. Becker, Advanced time-correlated single photon counting techniques. Springer 2005.
W. Becker, The bh TCSPC Handbook, 466 pages, 503 references. Available on www.becker-hickl.com
Please see also www.becker-hickl.com, 'Literature', 'Application notes'

More than 15 years experience in multi-dimensional TCSPC. More than 700 TCSPC systems worldwide.