



PDC Series



The PDC is an electronic carrier module that can operate any silicon avalanche diode suitable for Geiger mode operation (with up to 480V breakdown voltage BV). To achieve the desired trade-off between quantum detection efficiency and dark counting rate, the over-voltage above breakdown voltage is adjustable from 5V to 24V.

A fast timing electronic board fully exploits the device performance in photon timing. By means of an easily configurable Peltier controller the module can operate devices mounted on a cooler with a temperature sensor (NTC or PTC). The detector device is protected from overheating (e.g. in case of daylight illumination) by a built-in monitor of current and temperature.

A patented integrated Active Quenching Circuits (iAQC), specifically designed and optimized for photon counting applications, makes the PDC ideal for portable equipment and for all applications requiring low power consumption.

Flexibility

operates any silicon SPAD detector with up to 480V breakdown voltage BV

Best-in class Timing Accuracy

reduces timing jitter typically by a factor of 2

MODULE FEATURES

- Up to 24V over-voltage above BV
- Electronic time jitter down to 20ps FWHM
- Detector fully protected from overheating
- Built-in control of TE cooler
- Robust and low cost
- Low power consumption

BIOMEDICAL APPLICATION

- Medical Diagnostics
- Genomics/Proteomics
- Fluorescence spectroscopy
- Single molecule spectroscopy

INDUSTRIAL APPLICATION

- Optical Testing of integrated circuits
- Metrology by Time of Flight measurements

QUANTUM APPLICATION

- Quantum Cryptography
- Quantum Optics
- Single-photon source characterisation

ASTRONOMY APPLICATION

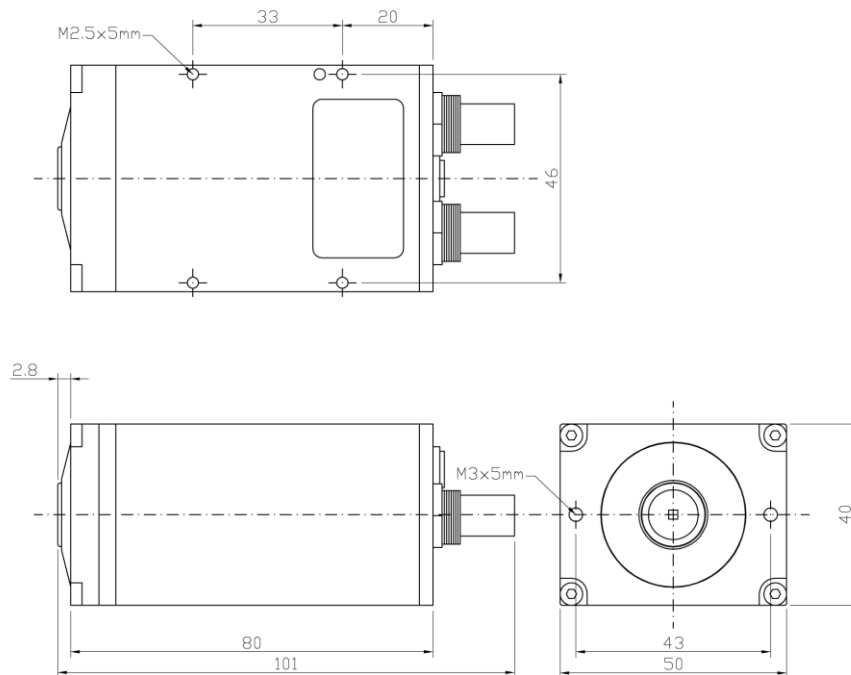
- Optical Range Finding, LIDAR & LADAR
- Astronomy Observations & Adaptive Optics

Specifications

	Min	Typ	Max	Units
Electronic time jitter (FWHM full-width at half-maximum) At the TTL Counting Output At the NIM Timing Output	100 20			ps
Quenching voltage pulse		20		V
Security Current Limit (factory adjustable)	1		50	mA
Over-Voltage above Breakdown Voltage (factory adjustable)	5		18	V
Peltier cooler current			1.4	A
Controlled Peltier temperature (cold side)	-20		0	°C
Dead Time (factory adjustable)	50		300	ns
External Supply Voltage required	unregulated DC, any value 5V ~ 12V			
TTL Output pulse rise and fall time Output pulse duration Gating input Supply Voltage input connector	< 2ns on 10pF load 20ns typical 5V CMOS control (0V gates detector off) Standard 3.5mm supply socket			

Designed and built compliant with the European Union Directive 2011/65/CE (also known as RoHS 2)

Mechanical drawing



(all measures in mm)






Ordering Information

Products can be ordered directly from Micro Photon Devices or its representatives. For a complete list of representatives, visit our website at www.micro-photon-devices.com.

Custom designed products are available upon request.

PDM accessories list

These accessories are not provided with the module, but can be purchased separately.

<i>Part Number</i>	<i>Description</i>	<i>Details</i>
\$MAC001	Cable Lemo 00 - SMA 3m	
\$MAC002	Lemo 00 - BNC adaptor	
\$MAC003	12V 15W universal wall mount power supply	
\$MAC004	Main plug Europe type for power supply	
\$MAC005	Main plug US/JP type for power supply	
\$MAC006	Main plug UK / Ireland type for power supply	
\$MAC007	Main plug Australian type for power supply	
\$MAC008	Lemo 00 - SMA adaptor	
\$MAC009	Optical Table Universal Adaptor	

Warranty

A standard 24-month warranty following shipment applies. Any warranty is null and void if the module case has been opened or if the absolute maximum ratings are exceeded.