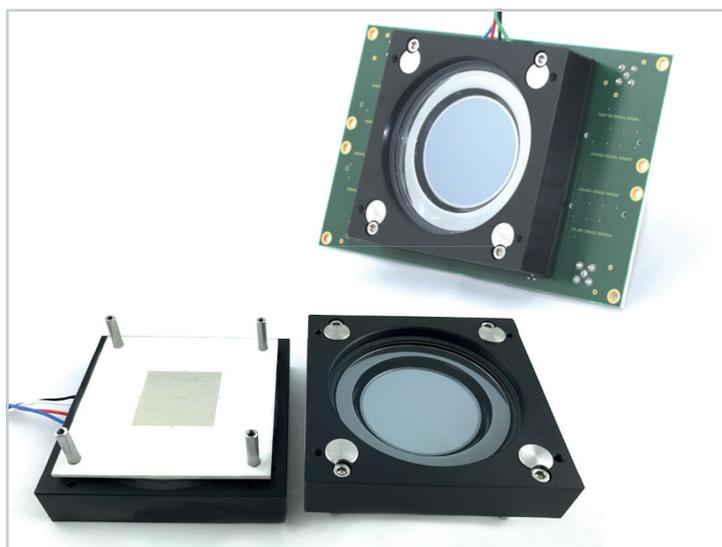


AuraTek-Round

Next generation Multi-Anode MCP-PMT



The AuraTek-Round is a next generation Multi-Anode Micro-Channel Plate Photo-Multiplier Tube (MCP-PMT).

It can be configured as a multi-channel single photon counter or analog photon pulse analyzer. The 1024 individual anodes are arranged in a 32 x 32 pattern with 0.828 mm pitch, resulting in a 26.5 mm square active area.

Customers can work with our engineering team to review other anode configurations and specialized connector readouts.

The timing performance is state-of-the-art, with pulse rise-time of <math><175\text{ ps}</math> and single photon transit time spread of <math><40\text{ ps rms}</math> per channel. Ask our experts to help you select the best readout electronics for your application.

Key Attributes

- > True noiseless photon counting
- > 430 ps FWHM pulse width
- > Transit time spread of <math><40\text{ ps rms}</math>
- > Extremely low dark counts
- > High density anode having 1024 pixels on 0.828 mm pitch and 4096 anodes
- > Customer configurable anode readout
- > Variety of high QE, low noise photocathodes covering full UV to visible wavelengths
- > Immunity to magnetic fields
- > Assistance with selection of optimal readout electronics

Applications

- > High Content Screening
- > Time Resolved Spectroscopy
- > Wide Field Time Correlated Single Photon Counting
- > Fluorescence Lifetime Imaging Microscopy (FLIM)
- > Forster Resonance Energy Transfer (FRET)
- > LiDAR
- > Wavelength Shifting Fibre Readout

Product Overview

General Characteristics	
Window	Fused Silica (Optional Fibre Optic/Sapphire)
Active Area	26.5 x 26.5 mm
Electron Multiplier	Dual MCP
Anode Formats	32 x 32 (Reconfigurable)
Anode Pitch	0.828 mm
Photocathode	Solar Blind, Bi-Alkali, S20, S25

Specifications

Single Photon Response	Typical
Dark Counts per Anode	< 2.25 cps
Pulse Risetime (10% to 90%)	< 175 ps
Pulse Width	< 430 ps FWHM
Transit Time Spread	< 40 ps RMS
Pulse Height Distribution	100% FWHM
Linear Total Count Rate	Up to 10 MHz

Maximum Ratings	
Overall Voltage	< 3500 V
Operating Temperature	-50°C to +50°C
Storage Temperature	-50°C to +50°C

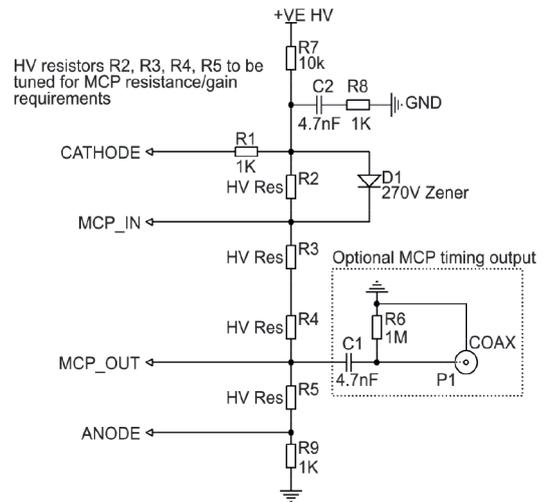


Figure 1 : Typical dropper chain example

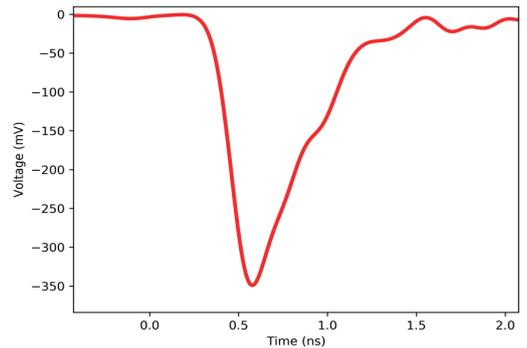


Figure 2 : Average of 50 single photon pulses measured on 5 GHz, 20 GS/s LeCroy oscilloscope, using sin(x)/x interpolation and illuminated using a Photek LPG-405 pulsed laser.

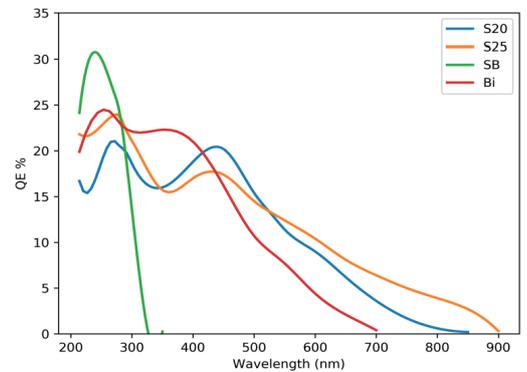
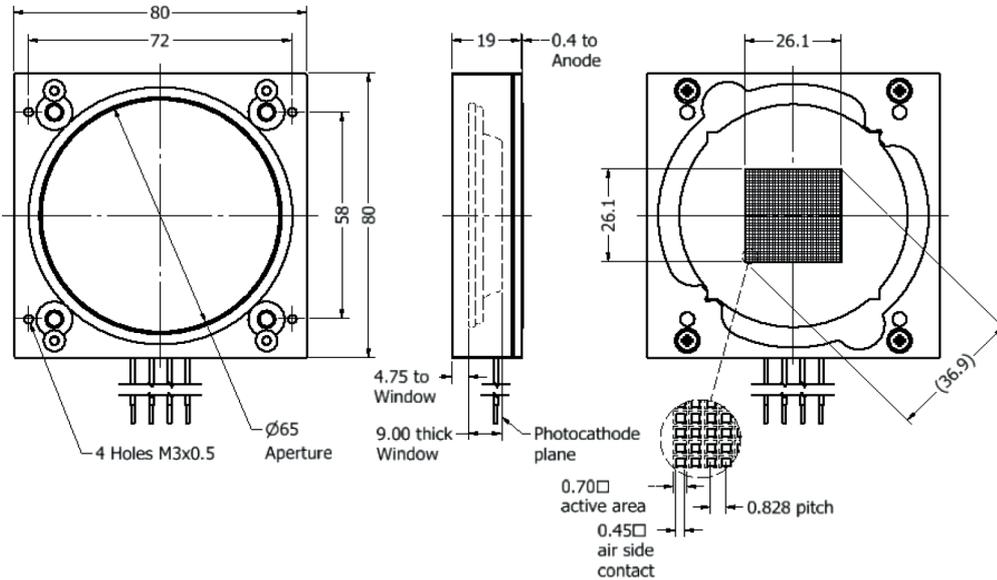


Figure 3 : Available photocathodes on fused silica window. Optional fibre optic window will reduce sensitivity and no response below 300 nm.

Outline Drawing



Interposer Boards

Interposer boards with ribbon connectors are available in user defined configurations, including summing of adjacent anodes or reduced area coverage. Examples include:

Anode Format	PITCH		Total Anodes
	X (mm)	Y (mm)	
32 x 32	0.828	0.828	1024
16 x 16	1.656	1.656	256
8 x 8	3.312	3.312	64

About Photek

Photek is a specialist manufacturer of vacuum based tubes and camera systems for photon detection.

Our product range includes; Camera Systems, Image Intensifiers, Photomultiplier Tubes, Streak Tubes plus a range of associated electronics.

We are experts in large area and ultra-high speed imaging and advanced photon counting camera systems.

Our continuing success is built upon continuous innovation and product development, and by harnessing and applying knowledge to find solutions for all of our customers' applications.

Photek is accredited to ISO 9001 and ISO 14001.



Contact Us

Our team of specialist engineers and scientists are ready to discuss your application requirements in depth.

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