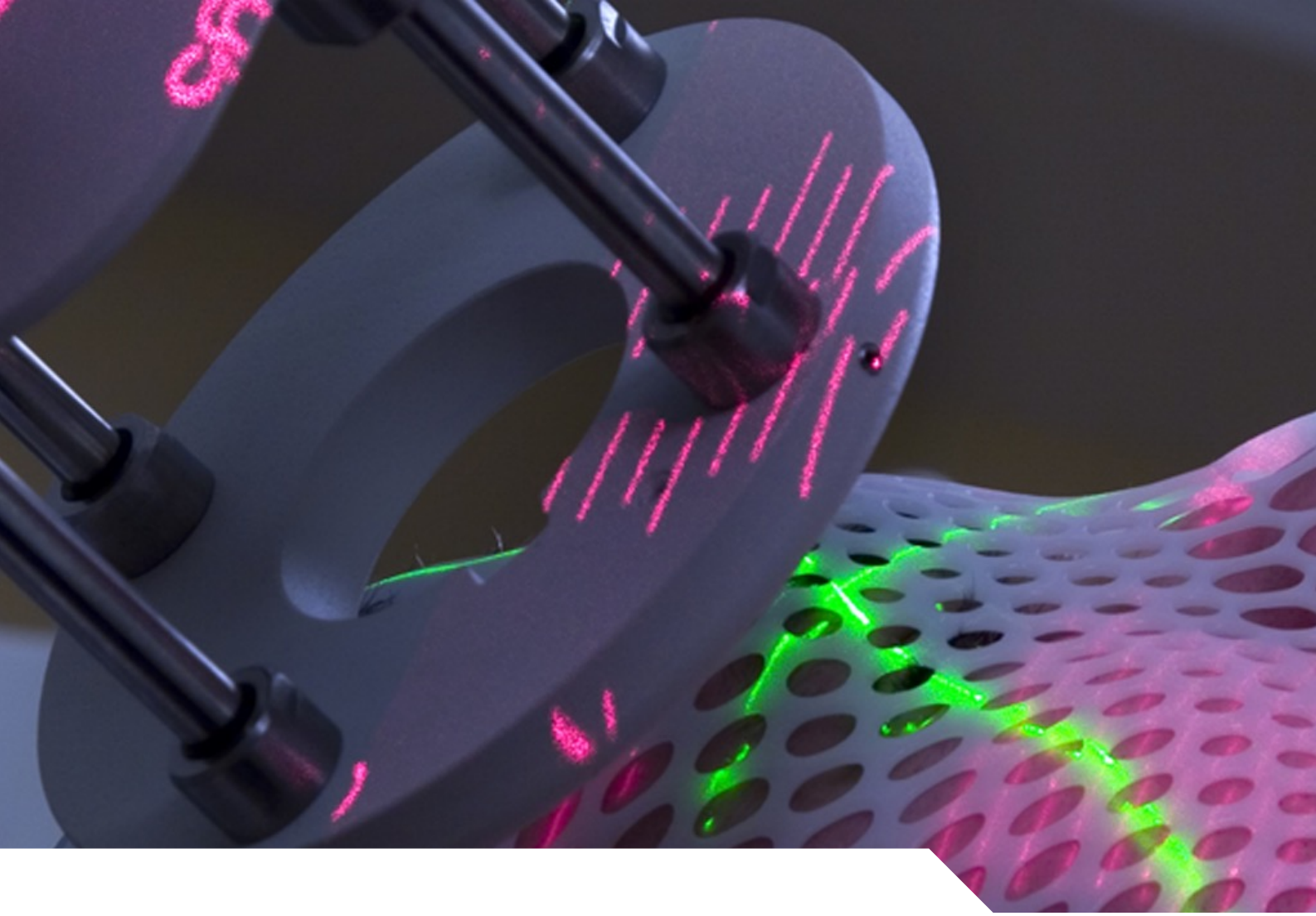


PENLÍNK

Scientific and Industrial Detectors for Advanced Research and Analysis

Our scientific and industrial detectors are at the forefront of modern research, empowering scientists and engineers across industries to make ground-breaking discoveries and drive innovation forward.

From universities to industrial projects, our detectors are trusted by leading researchers and manufacturers worldwide for their precision, reliability, and versatility. In this application note, we will explore some of the key applications of our detectors, from surface analysis and biophotonics to non-destructive testing and nuclear physics. Discover how our detectors are revolutionizing research and innovation across industries.

Scientific and Industrial Detectors for Advanced Research and Analysis

At Penlink, we offer a wide range of scientific and industrial detectors to researchers and institutions worldwide. Our detectors are designed to meet the needs of advanced research and analysis, from surface analysis and biophotonics to nuclear physics and non-destructive testing.

Our detectors are produced by one of the top suppliers in the industry, and we offer a range of ion and electron detectors, single photon detectors, X-ray components, and neutronic detectors. These detectors can be used to detect, amplify, and/or image low light, radiation, and emissions, making them ideal for a wide range of scientific applications.

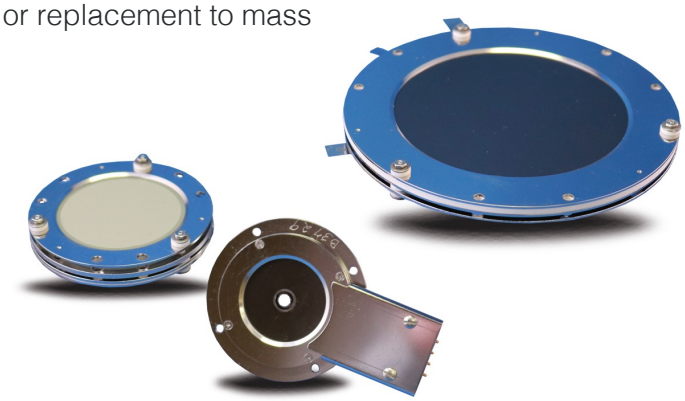
Ion and Electron Detection

Our ion and electron detectors are essential tools in surface analysis, allowing researchers to study the composition and structure of surfaces at the atomic and molecular level. These detectors can be used in fields such as materials science, nanotechnology, and surface chemistry, and our range of products includes microchannel plates, channeltron detectors, and more.

MCP-based detectors

Our Advanced Performance Detectors (APDs) are plug-and-play electro-optic assemblies which provide a complete housing, facilitating manufacturing assembly, repair or replacement to mass spectrometers and other machines.

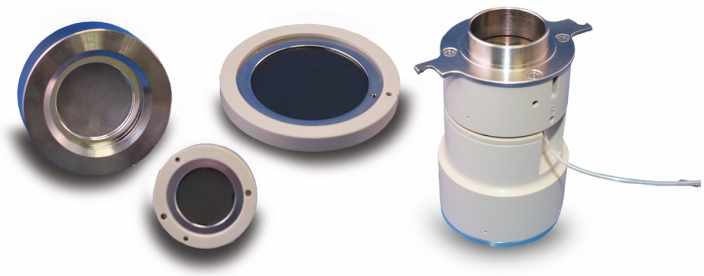
- High speed
- Compact
- High performance
- Bakeable to 300°C
- High gain - low noise



Time Of Flight Detectors

We provide a wide range of Time of Flight (TOF) detectors to support portable, ultra-fast and bi-polar instruments. Each TOF detector from our supplier is designed to provide the most accurate sample analysis and includes our unique TruFlight MCPs. We will work with you to ensure your detector is equipped to meet your exact specifications.

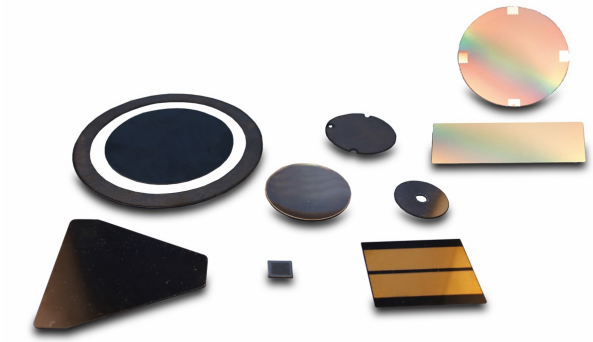
- Superior analysis
- Precise measurement
- Ultra-fast and bi-polar solutions
- Maximize mass resolution



Microchannel Plates

Microchannel plates (MCPs) from us are made from a proprietary glass formula, which ensures the highest quality and longest life of any other commercially available MCP.

- High speed
- Long life
- High electronic gain
- Immunity from magnetic fields
- Fast response
- Low noise



Capillary Inlet Tubes

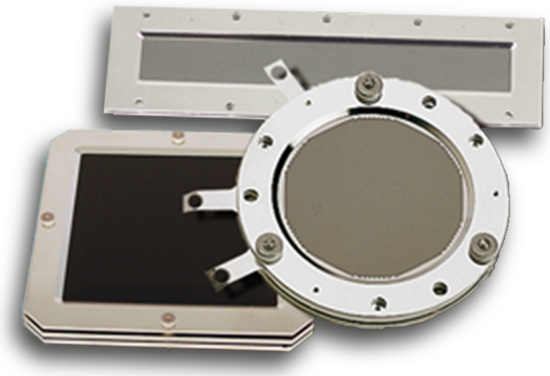
Our supplier designs and manufactures capillary inlet tubes in both single channel and multichannel arrays to improve overall performance of analytical instruments.

- Increase ion flow into instrument
- More accurate analysis
- Increase in ion transfer efficiency

Electron Generator Arrays

Electron Generator Arrays (EGAs) consist of millions of precision glass tubes fused together to produce a uniform and mechanically rigid structure.

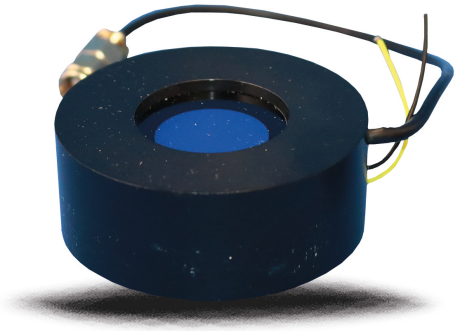
- Longer life
- Cold ionization source
- Excellent stability
- Large format
- Low maintenance



Single Photon Detection and Imaging

Our single photon detectors are ideal for applications in biophotonics, allowing researchers to study the interactions between light and biological materials. This research has applications in fields such as medical imaging, drug discovery, and biotechnology. Our range of products includes photomultiplier tubes, avalanche photodiodes, and more.

Image Intensifier Tubes



We have a wide range of image intensifiers that support medical imaging, industrial quality, non-destructive testing, and research applications.

- Superior sensitivity
- Customized Options
- Highest quantum efficiency
- Up to 1 million gain

Cricket™ 2 Advanced Image Intensifier Adapter

Cricket™2 offers plug and play intensified imaging or single photon counting functionality. Recognized for best value, Cricket™2 sets an unmatched standard for connectivity with scientific microscopes and cameras.

- Capture images across a broad spectral range from 200 to 900 nm
- Wide choice of Hi-QE™ photocathodes and gating options
- Compatible with most CCD, CMOS, EMCCD and sCMOS cameras
- Ideal for a large number of applications including physics, FLIM, plasma research and corona detection
- Simple and cost-effective way to convert existing cameras into a complete plug and play intensified solution

MCP-PMT

Our MCP-PMT solutions are ideal for high-speed single photon counting applications. Our MCP-PMTs offer low dark count rates, very high B-field immunity, and superior photon detection.

- 40 ps transfer time spread for single photons
- Magnetic field immunity up to 3 Tesla
- Hi-QE photocathode option
- Gated intensifier tubes
- 8 mm or 18 mm active diameter

Capillary Inlet Tubes

The Planacon™ family of products are square-shaped MCP-PMTs designed to capture fast timing events such as those found in single photon counting applications.

- Specialized Medical Imaging
- Cherenkov – RICH, TOF, TOP, DIRC
- High Energy Physics Detectors
- Homeland Security

Streak Tubes

Our Streak Tubes can provide spatial resolution up to 50 lp/mm, temporal resolution to sub-picosecond in streak mode, or exposure times less than 10 ns in framing mode, making them a versatile solution to support a wide range of applications.

- High-sensitivity
- Low-noise
- High-uniformity photocathode
- Ultra-fine spatial resolution
- Stable spectral sensitivity

Mantis³

A single photon counting camera with nanosecond time-stamping. The Mantis³ consists of a Timepix3-based visible light camera coupled to a Cricket™2 containing one of our suppliers high-end image intensifier tubes. The TPX3Cam* is a high-rate, event-driven, time-stamping camera. The coupled image intensifier enables single photon sensitivity and offers a choice of low noise photocathodes optimized for your application.

- Single photon sensitivity
- Timepix3 ASIC technology
- 1.6 ns timestamping
- Excellent time resolution
- Up to 80 Mhits/s rate capability

X-Ray Components

Our X-ray components are used in a variety of industrial applications, including non-destructive testing of materials and components. This technology allows engineers to detect flaws and defects in materials without damaging them, improving the safety and reliability of products. Our range of products includes X-ray detectors, imaging systems, and more.

Micro Pore Optics

Square channel optic to collimate or focus X-Ray, UV Photons.

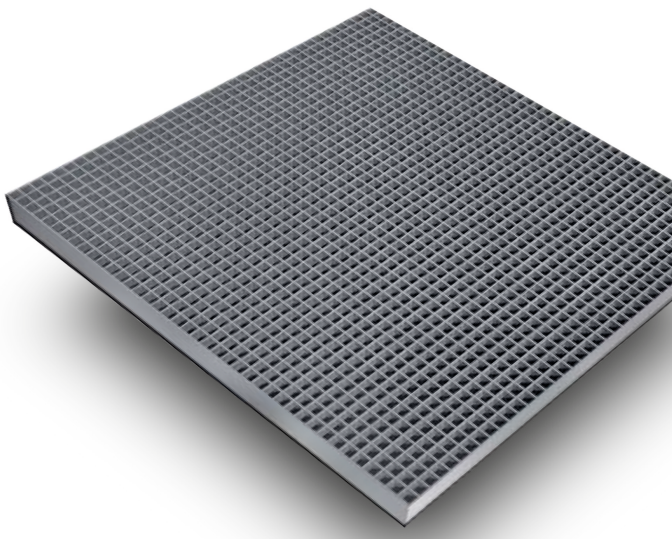
Our Micro Pore Optics have been developed for X-Ray imaging applications on interplanetary space missions. Compared to conventional X-Ray optics, our Micro Pore Optics are extremely compact with ultra-low mass.

X-Ray and UV photons can be focused, concentrated or collimated due to the total external reflection at grazing angle (<2°) inside the micro pore channels.

Square pore sizes of 10, 20, 100, or 700 microns are available; other configurations may be available. MPOs can be ordered as square packed or radially packed, and in flat, spherical or cylindrical shapes.

The surfaces inside the square channels have a near-perfect flatness and a very low roughness. They are ideal for focusing or collimating X-Ray and UV photons.

- Millions of square-shaped channels
- Pore sizes of 10, 20, 100 or 700 microns
- Compact design
- Flat, spherical or cylindrical shape
- Customized to your specifications



Neutronic Detection

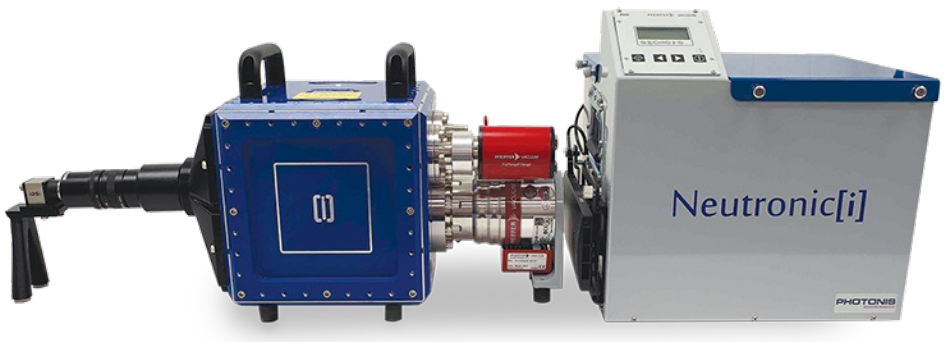
Our neutronic detectors are essential tools in nuclear physics research, allowing researchers to study the properties of atomic nuclei and the behaviour of subatomic particles. This research has applications in fields such as energy production, nuclear medicine, and national security. Our range of products includes neutron detectors, ionization chambers, and more.

Neutronic [i]

The Neutronic [i], will allow you to capture an image using neutrons, a technique which is particularly useful when the object you are trying to capture is encased by dense metal, for instance.

Every Neutronic [i] is equipped with a special image grade 100x100 square millimetre MCP along with a vacuum chamber, high-voltage power supply, and controller. The Neutronic [i] provides superior <50 µm spatial resolution combined with high detection efficiency of 70% cold neutron or 50% thermal neutron imaging.

- Faster imaging
- Superior spatial resolution
- Large field of view
- Easily serviced
- Customizable options



Exploring the Diverse Applications of Our Scientific and Industrial Detectors

Our scientific and industrial detectors are used in a wide range of applications, from research in university laboratories to industrial projects. Here are some of the key applications that can use our detectors:

- **Surface Analysis:** Ion and electron detectors are essential tools in surface analysis, allowing researchers to study the composition and structure of surfaces at the atomic and molecular level. This information is critical in fields such as materials science, nanotechnology, and surface chemistry.
- **Biophotonics:** Single photon detectors are ideal for applications in biophotonics, allowing researchers to study the interactions between light and biological materials. This research has applications in fields such as medical imaging, drug discovery, and biotechnology.
- **Non-Destructive Testing:** X-ray detectors are used in a variety of industrial applications, including non-destructive testing of materials and components. This technology allows engineers to detect flaws and defects in materials without damaging them, improving the safety and reliability of products.
- **Nuclear Physics:** Neutron detectors are essential tools in nuclear physics research, allowing researchers to study the properties of atomic nuclei and the behaviour of subatomic particles. This research has applications in fields such as energy production, nuclear medicine, and national security.

PENLINK

Get in touch with us today to start your next project!

WWW.PENLINK.SE

Why Choose Penlink for Your Scientific and Industrial Detector Needs?

At Penlink, we understand the importance of these applications and are committed to providing our customers with the most advanced scientific and industrial detectors available. Whether you are conducting research in a university laboratory or working on an industrial project, we have the expertise and experience to help you find the right detectors and imaging solutions for your needs.

Our team of experts can help you choose the right detectors for your application, and we offer custom-designed detectors and components to fit your unique design specifications. We partner with leading manufacturers and researchers to provide cutting-edge detection and imaging technologies that enable you to achieve your research and industrial goals with maximum efficiency and accuracy.

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