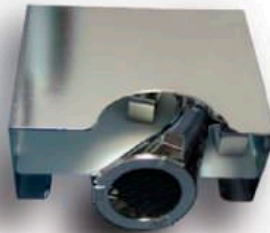
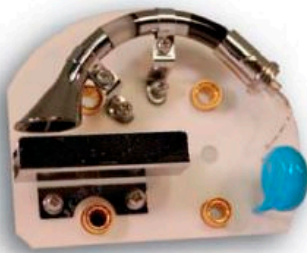
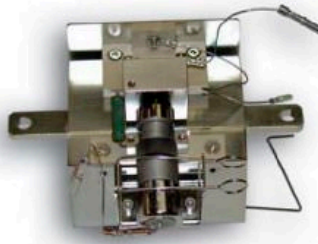


CHANNELTRON® Electron Multipliers



Channeltron® Electron Multipliers are durable and efficient detectors of positive and negative ions as well as electrons and photons. PHOTONIS offers over 150 standard and custom CEM designs.

Typical Channeltron applications include mass spectrometry, RGA, plasma analysis, Auger, electron spectrometers, SEM, FIB, and leak detectors.

With their low mass and high gain, electron multipliers are also used in many nuclear physics labs and for space applications to count electrons and charged particles in pulse mode operation.



PHOTONIS offers the widest selection of standard and custom Electron Multipliers.

Superior sensitivity and unsurpassed dynamic range

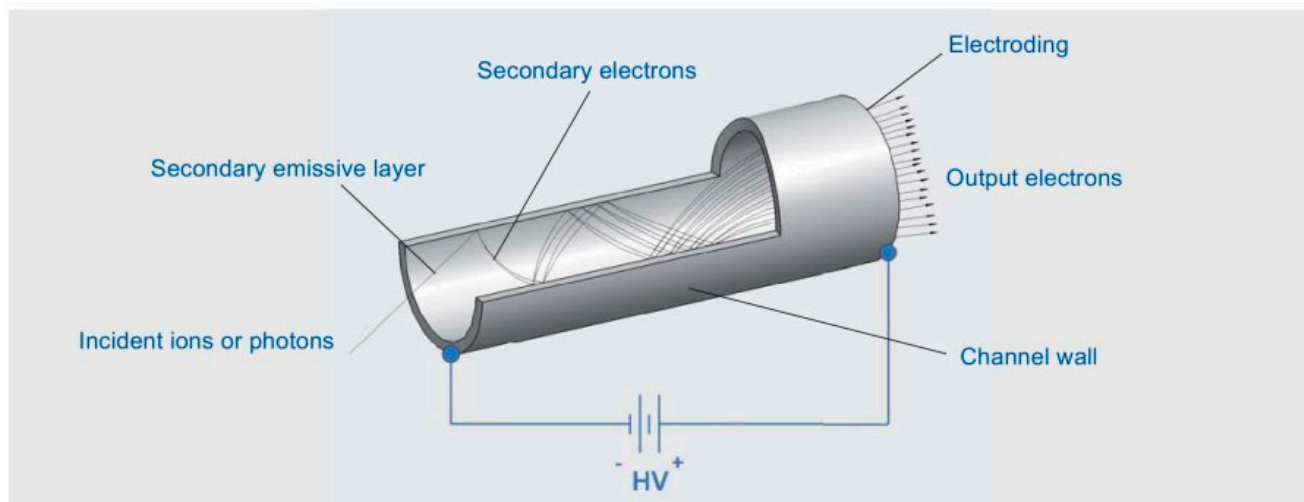
Advanced Channeltron® detectors provide the highest sensitivity through superior signal collection and noise reduction. They also offer the highest dynamic range to assure a linear response beyond the limits of most analytic instruments.

Developments in Channeltron channel electron multiplier (CEM) technology have extended the dynamic range (exclusive EDR option), enhanced lifetime under the environments typically encountered in mass spectrometers, and improved detection efficiency at higher masses.

Improvements in conversion dynode technology have resulted in structures capable of operation at higher voltages and materials with improved ion-to-electron conversion yields for better sensitivity at higher masses.

Channel electron multipliers directly detect and amplify energetic photons and charged particles such as positive and negative ions, electrons and assorted molecular and subatomic particles.

Channel Electron Multiplier Operation



Easy replacement and long life

Our Customer Service and Applications specialists can help you identify a replacement detector for your mass spectrometer, even if the system is no longer manufactured. The Detector cross reference lists standard replacement CEM's for over 150 OEM models. We can also easily translate a Galileo, Burle or competitive part number to a current PHOTONIS model.

Replacement MAGNUM® cartridges can be installed quickly with the minimum of instrument down time. Installation can be performed by an operator, eliminating the need for an expensive factory service call. Each cartridge is designed to be an exact replacement for the original, and will fit into the existing ion optics frame.

Channeltron electron multipliers are designed and manufactured to the highest standards. The patented detector design provides sustained output longer than other detectors, making Channeltron detectors the most economical detectors available.



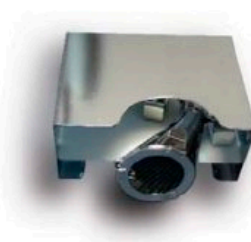
Widest range of performance and configurations

PHOTONIS is the world's largest supplier of standard, retrofit and customer detectors for mass spectrometry and other applications. Single channel, multi-channel and miniature Channeltron designs can be customized to enhance detection efficiency or for ease of integration.

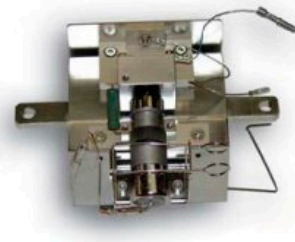
- Cones: optional cone size, shape and angle ensure the cone is large enough to encompass all events.
- Grids: high transmission grids (85-90%) ensure secondary electrons are forced down the cone.
- Coatings: coating options, such as CsI, MgF₂, MgO, KBr, Au and Cu, improve detection efficiency of specific wavelength photons, high or low mass ions or X-rays.
- Collectors: collector options include caps and anodes.
- Leads: leads and feed-through options facilitate integration.



4822B



4765GM



Agilent Ion Optics MAGNUM

Spiraltron™ and MegaSpiraltron™ for high pressure

The unique Spiraltron CEM's are designed for high pressure applications, such as portable mass spectrometers. The six-channel structure provides long life and allows operation at elevated pressures. The internal spiral significantly reduces ion feedback from residual gas molecules. The new MegaSpiraltron design is a small and robust ion detector that can achieve high gain while maintaining low noise.



MAGNUM® detector cartridges

MAGNUM electron multipliers offer exceptional performance for optimum mass resolution, dynamic range and detection sensitivity. MAGNUM detectors are based on Spiraltron technology, using six spiral multiplier channels fed by a single integral ion collection aperture. Distributing the secondary electron generation over six separate channels increases linear output current and promotes longer detector life.



Over 150 standard and custom designs

Mounted Channeltron assemblies provide optimum performance and lowest cost-of-ownership. A variety of leads, feed-throughs and mounting options allows easy integration into your process.



PHOTONIS

INDUSTRY & SCIENCE

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