Features

For instruments: Agilent 5971/A MSD, Agilent 5972/A MSD, Agilent GCD

- Easy Replacement
- Extended Linearity
- Low Noise
- Lower Cost
- Longer Life
- Greater Sensitivity
- High Performance
- Compact, On Axis Design
- Wide Dynamic Range
- Excellent Pulse Height Resolution

The Photonis Channeltron Mass Spec Detectors deliver high performance and are the preferred detector for mass spectrometers. A 100% test and inspection policy guarantees customers the highest quality and most reliable mass spectrometer detectors.

Description

For instruments: Agilent 5971/A MSD, Agilent 5972/A MSD, Agilent GCD

OEM #: 05971-80101, 05971-80102, 05971-80103

- High performance detector for use with the HP 5971A and 5972A MSDs
- Photon-absorbing hardware for the highest signal-to-noise
- Dual-stage design for extended dynamic range and longer life
- Patented ceramic board-mounted plug-in design for easy minimal down time during installation

The **Channeltron® 5778 Mass Spec Detector** offers previously unobtainable levels of performance for the Hewlett-Packard 5971A and 5972A MSDs. If your applications demand high sensitivity, extended linear dynamic range and longer detector life, the 5778 Mass Spec Detector meets your requirements.

The **sensitivity** of the 5778 allows you to detect sub picogram and femtogram levels from complex mixtures. The 5778 provides this sensitivity through superior signal collection and reduction of unwanted noise for the highest signal-to-noise level available.

The 5778's hardware has been optimized through computer modeling to maximize signal collection. The improved detector geometry allows this signal to be amplified to a higher degree than competitive detectors, maximizing signal-to-noise measurements. And with Photonis' patented photon-absorbing hardware, unwanted collection of photon and neutral noise is virtually eliminated.

Specs

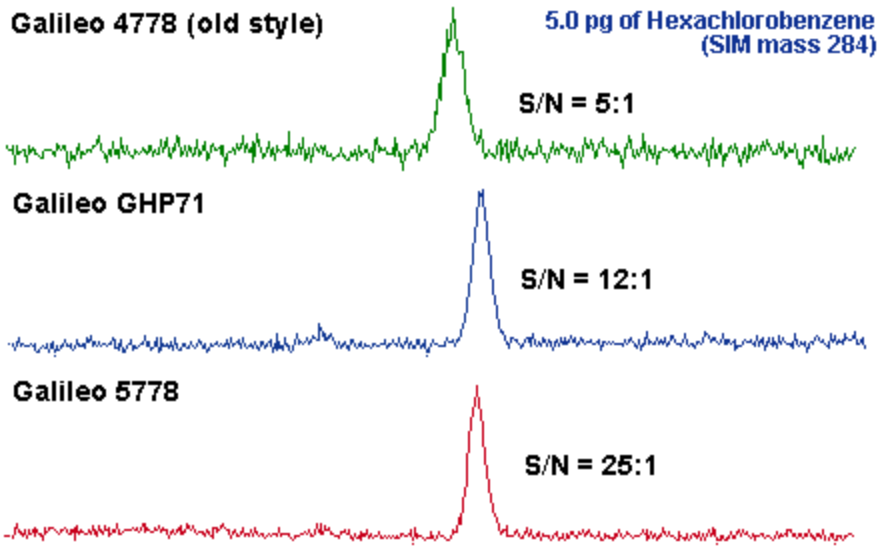


Figure #1 - Comparison with Photonis 4778 Multiplier.Figure # 1 shows the improvement in sensitivity that has been achieved by Photonis with the development of the Model 5778 multiplier. The chart demonstrates an increase of at least 5 fold increase in signal-to-noise ratios. Comparison , with other the manufacturers multipliers has demonstrated the Photonis Model 5778 is the most electron multiplier available for the Agilent/HP 5971 and 5972 instruments (see "The Mass Spec Source", Feb. 1995).

Extended linear dynamic range of the 5778 Mass Spec Detector results in reproducible spectra and accurate quantification for both trace and high-level analysis. Photonis' dual-stage design provides an absolutely linear response beyond the limits of the instruments and all other available detectors.

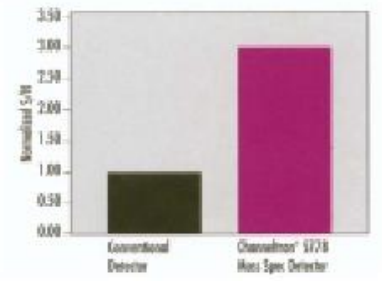
Improved long-term performance stability ensures consistently accurate results, requiring less frequent recalibration. And longer life means less down-time, making the 5778 the most economical detector available for the HP 5971A and 5972A MSD.

SPECIFICATIONS

Instrument	HP 5971A/5972A MSD
Performance level	High sensitivity; Extended linear dynamic range; Long Detector Lifetime
Operation	Dual-stage
Linear range	0-50 microamps output current
Configuration	High-purity alumina ceramic board mount
Gain	1×10^5 at 1400 V; 1×10^7 at 2700V
Resistance	10×10^6 ohms min. at 100°C; 14×10^6 ohm min. at 30°C
Dark current	5×10^{-12} amps at 2000V Max
Max. recommended pperating voltage	3000V

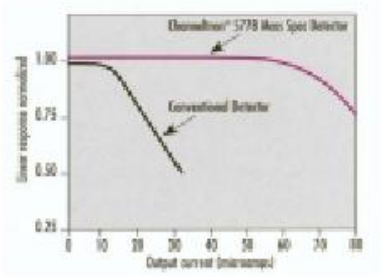
Typical Performance

SENSITIVITY



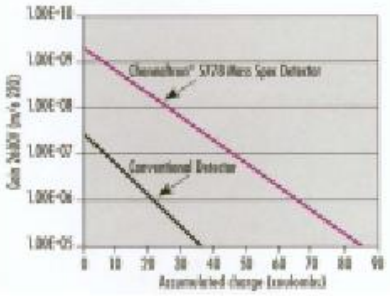
Avg. S/N at Tune +40V using 100 pg/ul Concentrations of Methyl Stearate as measured on HP 5971A MSD & 5890GC

EXTENDED DYNAMIC RANGE



Measured on a specially modified HP 5971A MSD (with 100 microamp max output current capability)

PROJECTED LIFETIME



Measured on HP 5971A MSD with helium ions and PFTBA valve closed

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Technical

Storage and Handling

Store up to five months in the detector's original packaging. For longer periods, store in a clean dry nitrogen box, or under vacuum of 10-2 torr or better. Proper maintenance will contribute significantly to the long life of your detector. While the active surface of the 5778 Electron Multiplier can be repeatedly exposed to air without degradation, keep it free of dust, lint or other particles. Use high purity nitrogen gas to remove any contaminants. Use talc free finger cots or gloves and degreased tools and equipment during handling and installation.

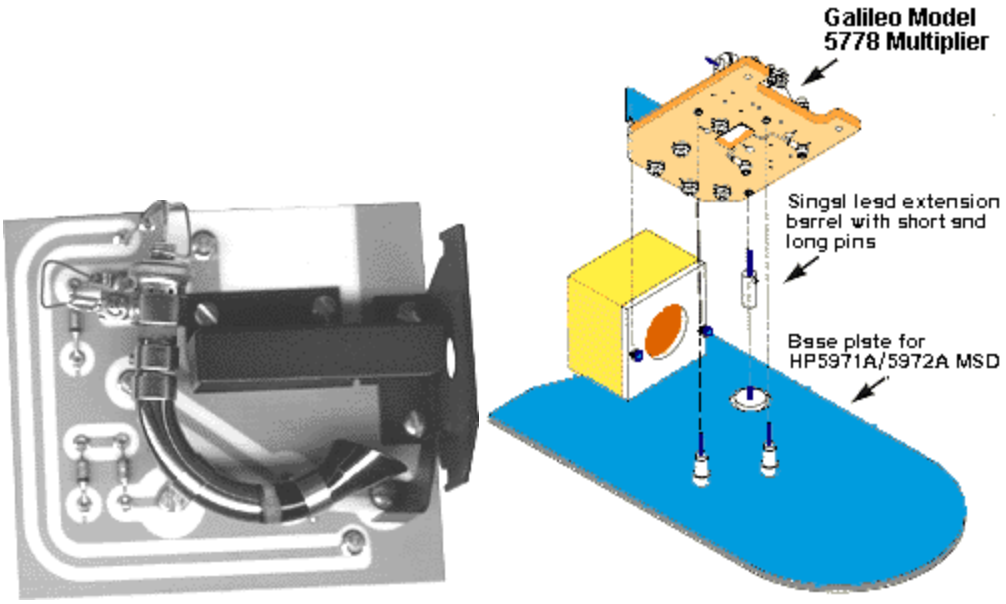
The Photonis 5778 Multiplier is warranted against defects in materials and workmanship for a period of one year from the date of shipment.

The newest technologies and highest performance from the world's largest supplier of standard, retrofit and custom detectors for mass spectrometry.

Installation

Easy installation is guaranteed with Photonis' patented, plug-in ceramic board-mounted design. The detector simply snaps into place in seconds, while ensuring alignment of the critical ion optics. Complete Installation instructions.

Installation Procedure



The plug-in design of the Photonis 5778 Electron Multiplier assures easy installation and perfect alignment of the critical ion optics. Keep the detector , all parts and surrounding areas clean during the installation. Follow the direction in the Hewlett-Packard Instrument Manual to vent the MSD and to remove the Mass Spectrometer mounting plate (analyzer) containing the source, quadrupole rods and multiplier.

1. Remove the conventional detector from the quadrupole housing and replace the two screws. Do not tighten these two screws in the housing, leave them slightly loose for the attachment of the 5778 multiplier.

2. Take the supplied signal lead extension barrel and press the receptacle on the lead on the instrument base plate. It may me necessary to adjust the height of this pin. When installed the top of the pin should be the same height above the base plate as the other two pins. If necessary cut to the required height.

Note: If your analyzer feedthrough pins are bent, straighten them. this can most easily be accomplished using two pairs of needle noise pliers. Grasp the end of the pin near the base with one pair of needle noise pliers and CAREFULLY straighten the pin with the second pair of needle noise pliers. Do not put any stress on the ceramic feedthrough or it will break. Broken feedthroughs can be repaired by Scientific Instrument Services.

3. Install the 5778 Multiplier by sliding the front aperture plate between the heads of the two mounting screws and the white mounting plate. While sliding the multiplier front aperture over the screws, align all three feedthrough pins with the female sockets in the bottom the 5778 multiplier detector board. Press the board down until the screws in the mounting plate are up against the slots in the multiplier aperture plate. Tighten the screws.

4. Check that all three feedthrough pins on the base plate are correctly inserted into the multiplier board. The multiplier board should be approximately level with the MSD base plate. The multiplier is now fully installed.

5. Follow the instructions in the Hewlett Packard instrument manual to reinstall the analyzer and pump down the instrument.