

PRODUCT BRIEF

LEAD SELENIDE INFRARED (PbSe) DETECTOR ARRAY (2 - 5 microns)

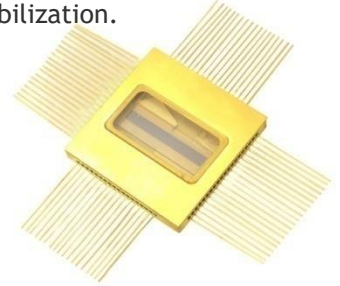
Advantages

- New Automated Chemical Processing (ACP) produces higher yield at lower cost.
- Extremely high reliability under extreme conditions.
- Long shelf life.
- Hermetically sealed package to completely eliminate humidity attack on detection area.
- Wide range of electrical characteristics available.
- Wide range of sizes available.
- 100% tested.
- State of the art microelectronics fabrication capability.
- Specializing in high density arrays. 64/128 element, etc.

Overview

Agiltron manufactures state-of-the-art lead sensitivity Selenide devices (PbSe) for room temperature operation as well as thermoelectrically cooled operation for spectroscopy from 1 to 5 microns. The linear arrays are typically with 64 element. The device can be supplied with integrated optical filters. They can be connected with pre-amplifiers or multiplexed amplifiers for applications. Thermoelectronic cooler and thermistor can be built in for temperature stabilization.

Listed below is typical 64 element electrical characteristics of PbSe Array of Agiltron Automated Chemical Processing (ACP) detectors.



Parameter	Typical Performance
Operating Wavelength Range:	2 to 5 Microns (PbSe)
Number of Elements:	Typical 64 detector elements
Element Size:	Pixel width 260 microns, pixel height 2600 microns, and pixel pitch 320 microns
Peak Detectivity:	D^* : 1×10^{10} (cm \cdot Hz $^{1/2}$ \cdot W $^{-1}$)

Mechanical Features

PbSe Detector array is typically manufactured on quartz substrate. Devices can be supplied integrated with optical condenser elements, thermoelectric (TE) coolers, and processing electronics, all in a miniature package.

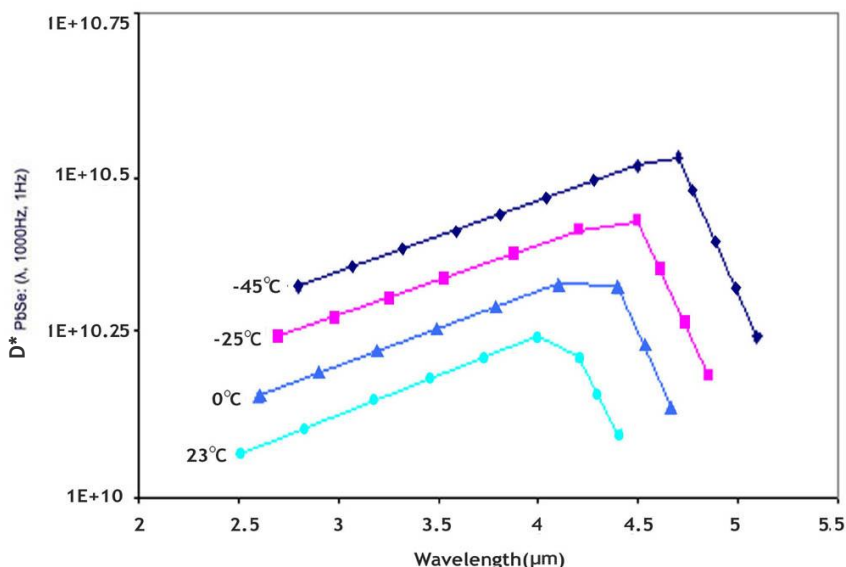
Aging Characteristics

All stock detector arrays undergo a minimum four week aging period. Experience with detectors manufactured by the advanced process, including the above aging period, has shown the electrical characteristics to be stable to within 10% for over a year.



Response of Detectors

The typical response for PbSe operates in 2 to 5 micron spectral region with time constants below 5 μ sec. TE-cooled packages are available with a response in the 1 to 5 micron region with increased D^* . Typical spectral response of standard PbSe detector is shown below.



Ordering Information

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	Material Type	Elements	Type	Element size: widthxheight (μ m)	Pixel pitch (μ m)
	1=Lead Selenide (PbSe)	064=64 elements 128=128 elements	00=Special 10=Packaged	Example: 260 μ m x 2600 μ m = 0260 x 2600	Example: 320 μ m = 0320

*Product dimensions may change without notice. This is sometimes required for non-standard specifications.



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