Endicott Interconnect®
Technologies, Inc.

Coplanar Grid

CdZnTe Based, Room Temperature, High Resolution Radiation Detector

Co-Planar Grid Detectors (CPG) are CdZnTe based, room temperature, large volume, high resolution, gamma ray detectors for nuclear spectroscopy applications. The eV-CPG™ detectors combine a large volume CdZnTe detector and associated electronics into a portable design. These detectors are available in sizes of, 10x10x10mm^3 and 15x15x7.5mm^3. Other larger sizes are available.

The CPG electrode design provides the basis for a significant increase in the size and detection efficiency of CdZnTe detectors while achieving extremely high energy resolution. eV-CPG™ detectors are ideal for applications requiring high efficiency, high resolution, room-temperature operation. Their compact size and rugged design allows their use in harsh or restrictive environments. The energy resolution of the CPG detectors varies with the active volume of the CdZnTe crystal.

EI Detection & Imaging Systems has made it easy by having CdZnTe crystal growth, detector design, electronic design, and manufacturing in our factory to provide a unique combination of technology and capability.

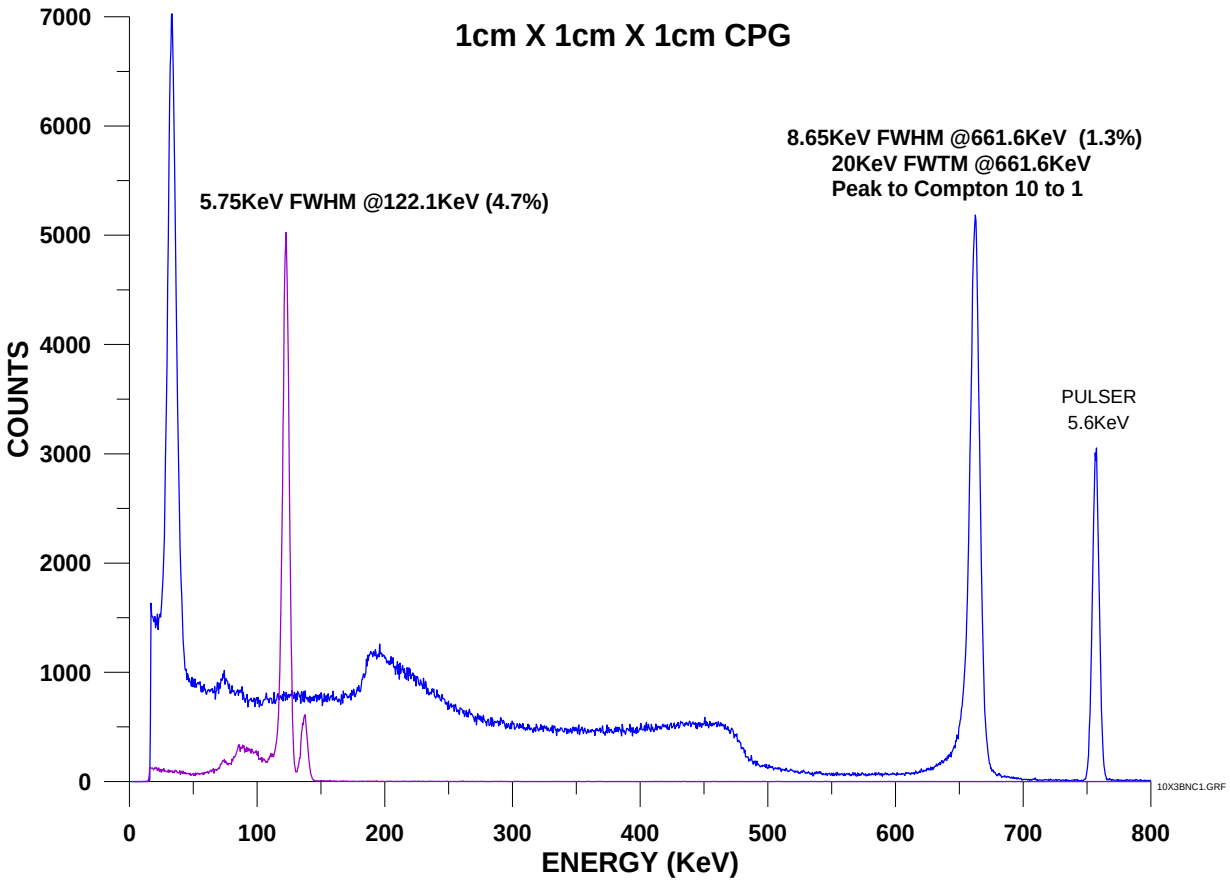
The application of the CPG electrode structure creates an electron-only collection device that allows for a reduction in tailing caused by the trapping of charge in the CdZnTe crystal. For this technique the anode is divided into 2 sets of connected electrode grids, with each set coupled to an independent preamplifier. One set of grids (the collecting anode) is held at a slightly more positive potential than the non-collecting set. The preamplifiers are then connected to a differential amplifier and the resulting signal is fed to an external shaping amplifier via supplied cables.

Applications

- Homeland Security
- Remote Portable Sensors
- Isotope Identification
- Lab based Gamma-ray Spectroscopy
- Health Physics
- Medical Diagnostics

Features

- Excellent Energy Resolution



Specifications

- Size: 10x10x10mm^3 - eV part #165597-06
  - <2 to 4% FWHM @ 662keV
- Measurement Capabilities
  - Energy Range: 30keV to 1.3MeV
- Operating Temperature
  - Range: +10º to +35º C Standard

  All measurements taken at 25°C
- Housing Dimensions
  - 38.1mm dia. x 159.5mm length
- Connects to Standard NIM Bin Electronics
- Electronics Requirements
  - CPG Detector Input Requirements:
    - +/-12VDC, HV Bias (negative 500V to negative 2000VDC), and Ground.
  - Signal Output:
    - Tail pulse with negative polarity; ~ 600ns rise time and ~700µs fall time

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