uIDM256B-CZT40

The micro-IDM compact gamma ray detector module comes with a room temperature Cadmium-Zinc-Telluride (CZT) semi-conductor sensor with 256 pixels, arranged in a 16x16 matrix. Each pixel is connected to a channel with amplification and trigger circuitry implemented in application specific integrated circuits (ASICs).
The ASIC amplifies and samples the analog signal when the input signal is above a user programmable threshold. The trigger signal, the address of the triggered channel and the charge signal is then available at the at the output interface. The output self-resets after a predetermined time.
The uIDM256B allows for gamma ray energy measurements up to 700 keV. The module has been measured to with a Co-57 source and at room temperature. The Co-57 photo-peak at 122 keV has 5.4 keV full-width-half-maximum (FWHM) energy resolution.
The modules can be arranged to create gamma ray cameras of different geometries. Typical applications include arrays of uIDM256 modules, creating a larger imaging array. The module has two M2 threaded holes for mounting. The module has two electrical connectors, which allows for mounting on a carrier board.
The detector modules are insensitive to magnetic fields and can be operated in vacuum/space.
The module is also available with 25.6 mm x 25.6 mm CZT crystal: uIDM256B-25.6, or without a crystal: uIDM256B.
The uIDM256 is also available in a 350 keV-charge range version: uIDM256A-CZT40.
Carrier boards for multiple uIDM256 modules can be delivered, contact IDEAS for more information.

Detectors CZT

Application Gamma ray cameras

Input charge range 0 keV to 700 keV

Number of pixels 256 (16x16)

Pixel pitch 2.5 mm

Energy resolution 5% FWHM at 122 keV

Trigger threshold Programmable

Outputs Energy and triggered channel

Power consumption 250 mW (excluding CZT)

Dimensions 40 mm x 40 mm x 20 mm