

## 1. Description

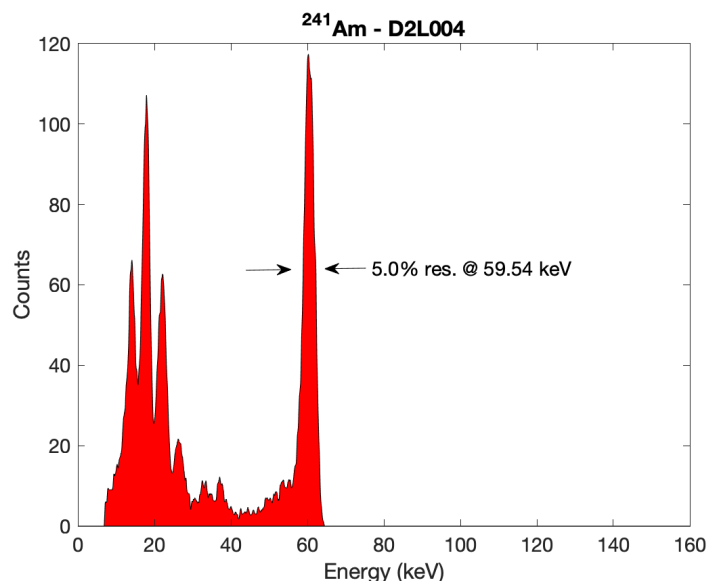
The CdZnTe planar detector is spectroscopic detector for X and  $\gamma$  rays based on Cadmium-Zinc-Telluride semiconductor material. The CdZnTe planar detector is designed for achieving optimal energy resolution in the low-energy range (10 keV - 150 keV) at high photon flux at room temperature.

## 2. Applications

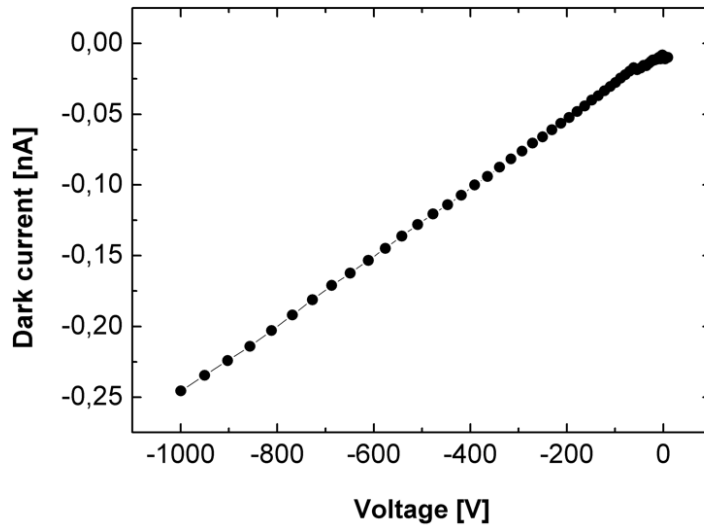
- Real-time non-destructive tests (NDT) for industrial applications
- In-line absolute density measurements for continuous productions (for example wood and ceramics industry)
- Dose measurement

## 3. Typical Characteristics

- Detector material: CdZnTe (CZT)
- Dimensions: 4.1 mm x 4.1 mm x 2.5 mm
- Electrodes: full area cathode (Au) and 2.0 mm x 2.0 mm single pixel with guard-ring anode (Au)
- Typical energy resolution (at -850 V cathode polarization): 5% at 59.54 keV ( $^{241}\text{Am}$ )
- Typical pixel dark current (at -1000 V cathode polarization): < 1 nA (25°C)



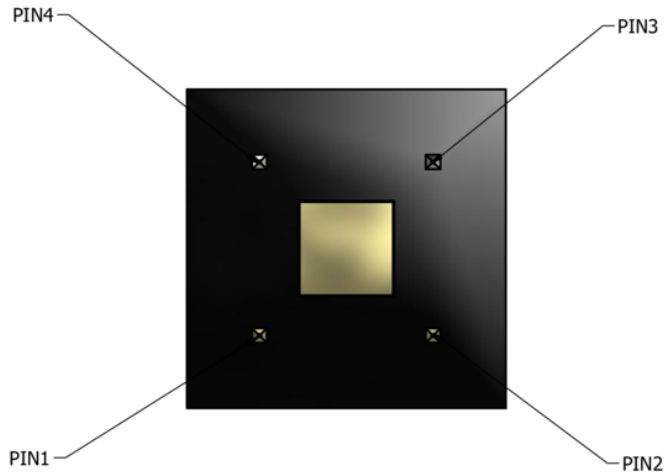
Typical  $^{241}\text{Am}$  spectrum collected with D2L004 and due2lab Front-end Unit



Typical I-V characteristic of D2L004

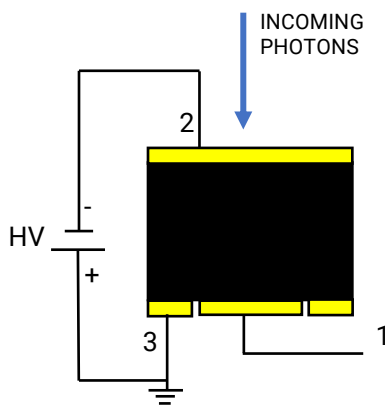
#### 4. Pin Configuration & Detector Operation

CONNECTION SCHEME



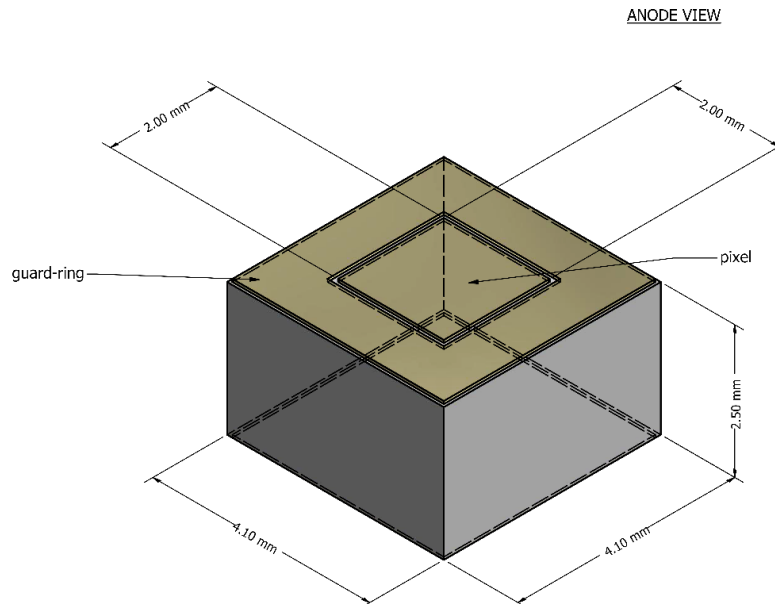
PIN No	Value	Finish
1	pixel output	Gold
2	High Voltage	Gold
3	guard-ring	Silver
4	not connected	Silver

D2L004 pin connection scheme

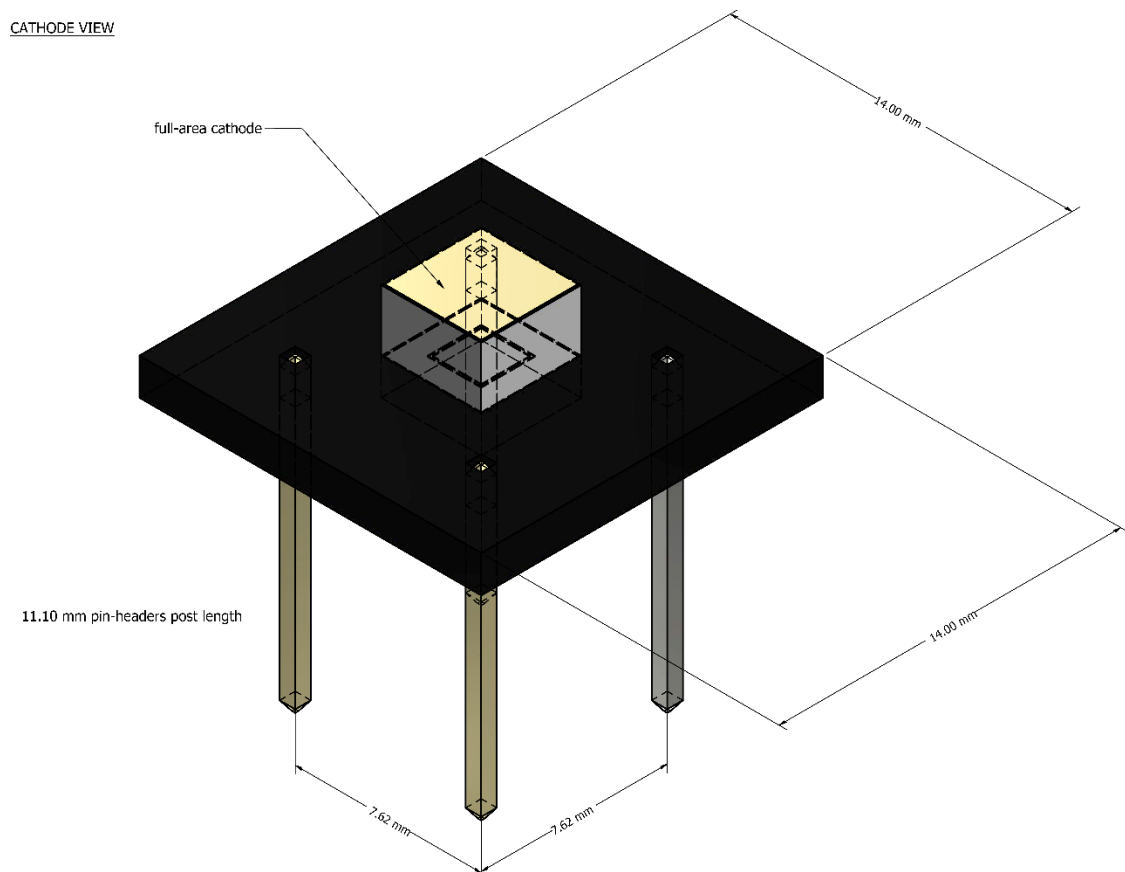


D2L004 detector electrical connections

## 5. Mechanical Drawings



CZT sensor dimensions



D2L004 assembly dimensions

### **IMPORTANT NOTICE**

D2L004 - CdZnTe planar detector, has been designed and optimized for using with due2lab CdZnTe Front-end Unit. Due2lab is not responsible for the results obtained by using D2L004 detectors with other front-end electronics.