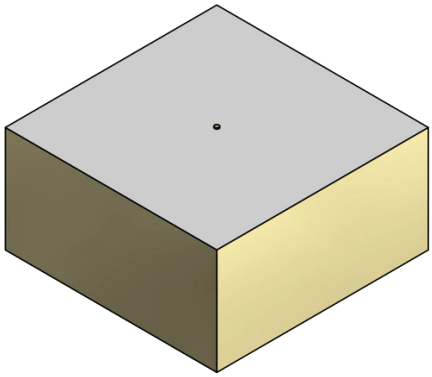


1. Description

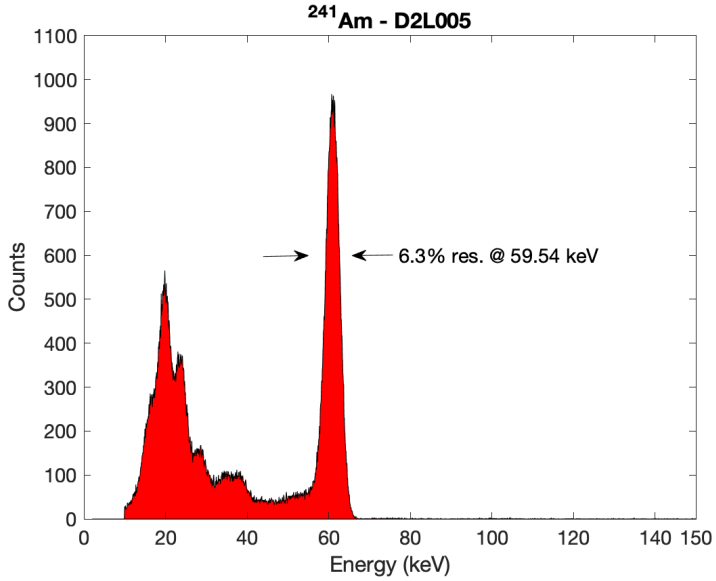
The CdZnTe hemispherical detector is a spectroscopic detector for X and γ rays based on Cadmium-Zinc-Telluride semiconductor material. The CdZnTe hemispherical detector is designed for achieving optimal energy resolution in a broad energy range, from 30 keV to 1.3 MeV.

2. Applications

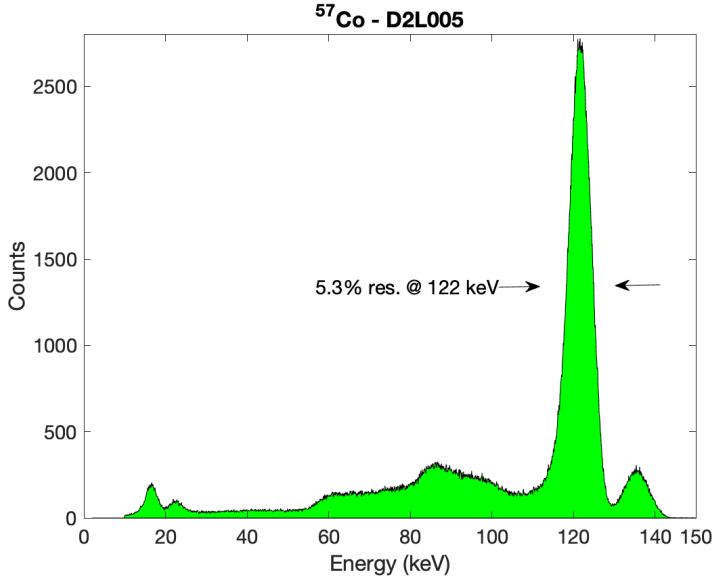
- Gamma source detection and identification
- Aerial survey
- Environmental monitoring

3. Typical Characteristics

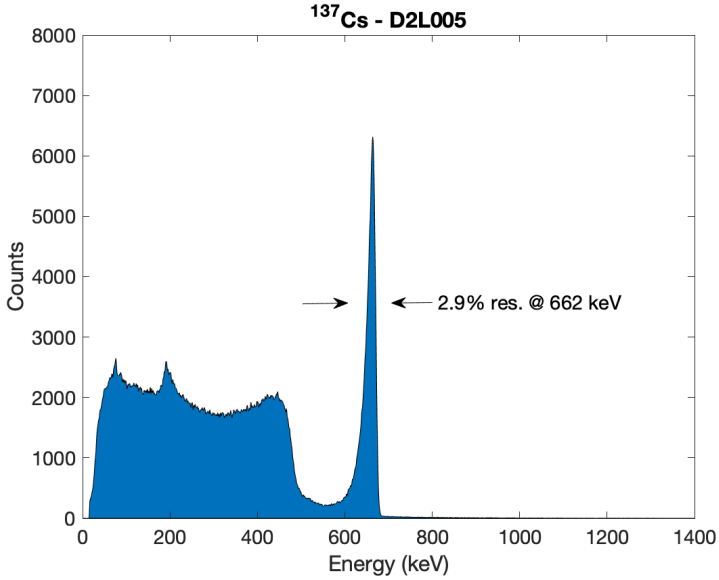
- Detector material: CdZnTe (CZT)
- Dimensions: 10 mm x 10 mm x 5 mm
- Electrodes: full area cathode (Au) and a single pixel (200 µm diameter) anode (Au)
- Typical energy resolution (at -2 kV cathode polarization):
    - < 6.5% at 59.54 keV (^{241}Am)
    - < 5.5% at 122 keV (^{57}Co)
    - < 3.0% at 662 keV (^{137}Cs)
- Typical pixel dark current (at -1 kV cathode polarization): < 8 nA (25°C)



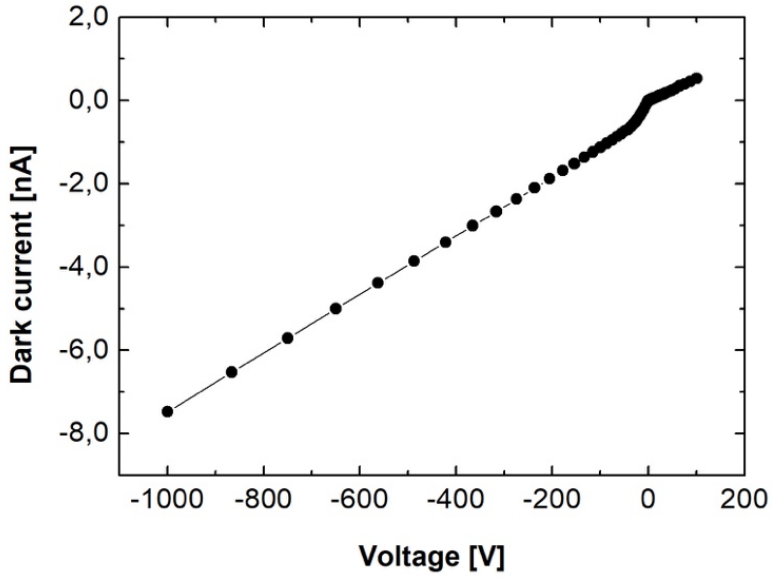
Typical ^{241}Am spectrum collected with D2L005 and due2lab Front-end Unit



Typical ^{67}Co spectrum collected with D2L005 and due2lab Front-end Unit



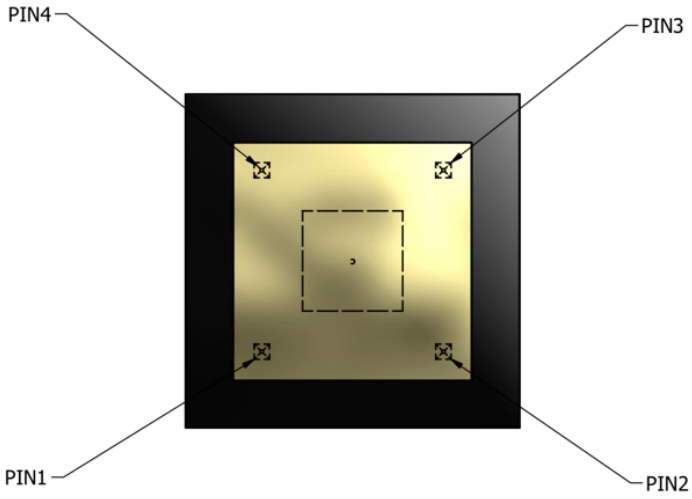
Typical ^{137}Cs spectrum collected with D2L005 and due2lab Front-end Unit



Typical I-V characteristic of D2L005

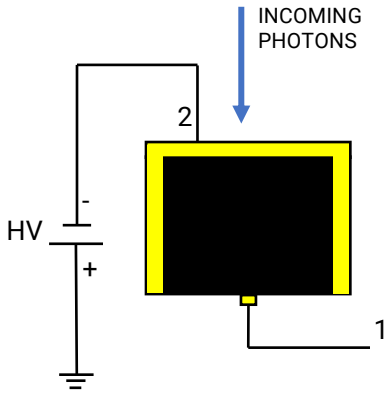
4. Pin Configuration & Detector Operation

CONNECTION SCHEME



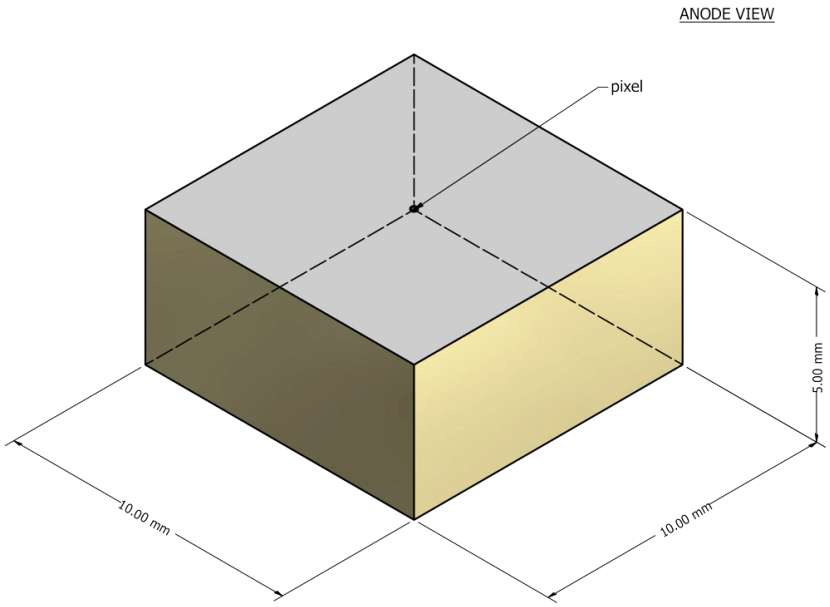
PIN No	Value	Finish
1	pixel output	Gold
2	High Voltage	Gold
3	not connected	Silver
4	not connected	Silver

D2L005 pin connection scheme

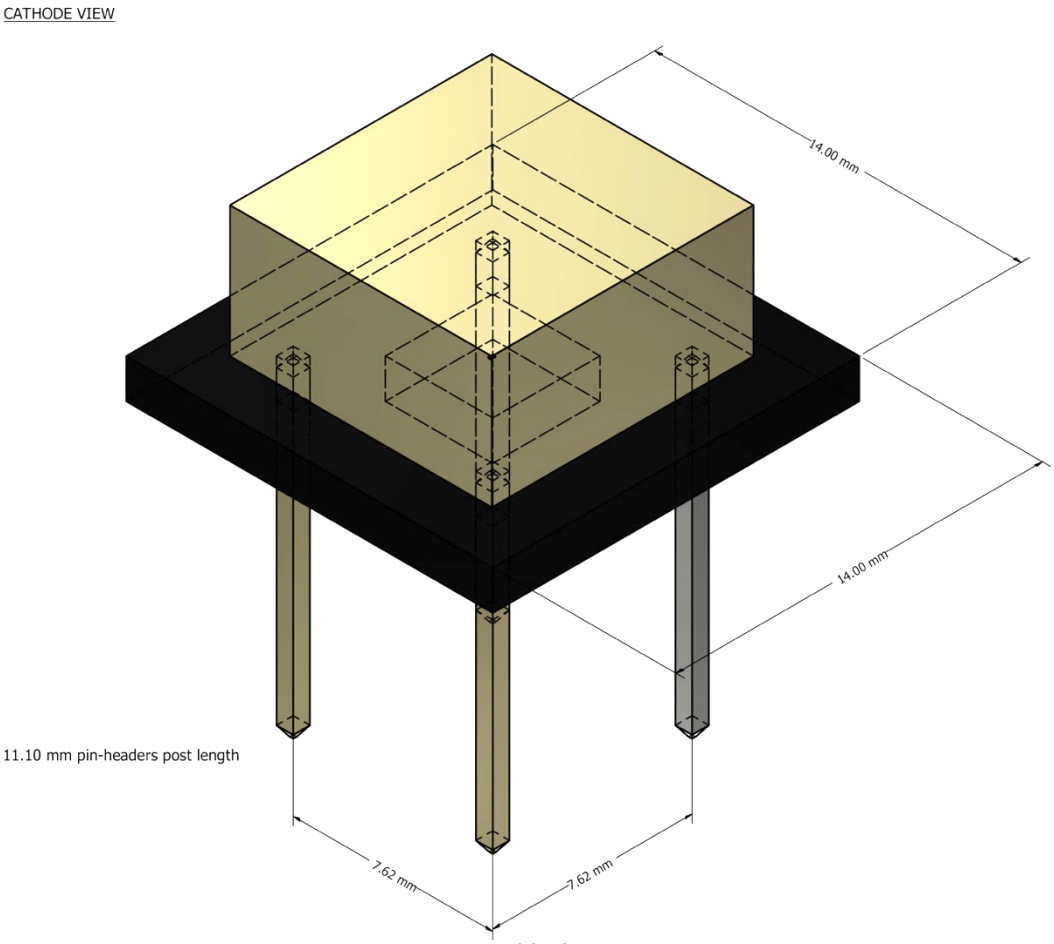


D2L005 detector electrical connections

5. Mechanical Drawings



CZT sensor dimensions



D2L005 assembly dimensions

IMPORTANT NOTICE

D2L005 - CdZnTe hemispherical detector, has been designed and optimized for using with due2lab CdZnTe Front-end Unit. Due2lab is not responsible for the results obtained by using D2L005 detectors with other front-end electronics.