



## Applications

- Gamma-ray Spectroscopy
- X-ray Imaging
- Health Physics
- Medical Diagnostics
- Site Monitoring
- Position Sensing
- X-ray Diffraction
- Dosimeters
- Industrial Gauging

## Features

- Small Size
- Excellent Energy Resolution
- High Charge Collection Efficiency
- Room-temperature
- Low Power Operation
- High Speed Detection
- Robust
- Non-Hygroscopic
- Direct Conversion - True Semiconductor
- High Density and Effective Z
- Durable, Versatile

## SPEAR™

A CZT based, room-temperature, Single Point Extended Area Radiation detector used to measure x- and gamma-rays.

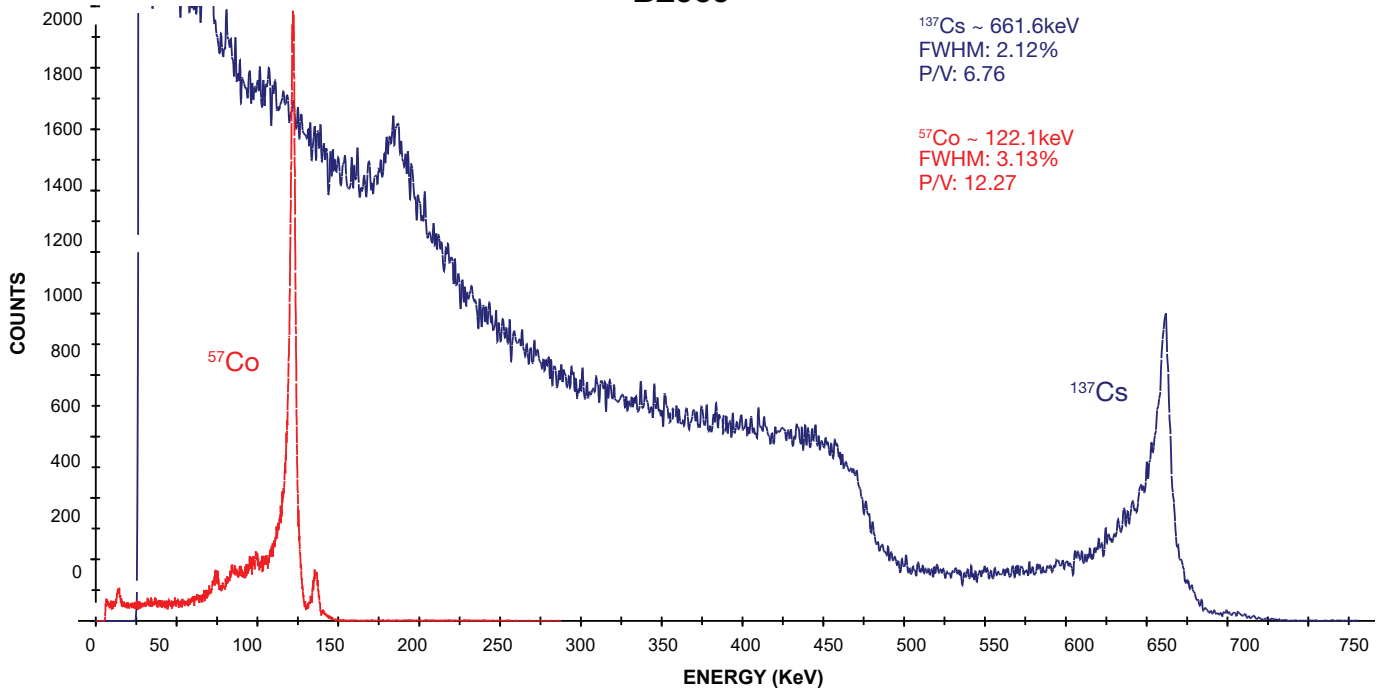
The SPEAR™ is an ideal entry level, high resolution CZT detector. These detectors are available off-the-shelf.

The SPEAR™ detector is a complete probe, comprising a 5x5x5mm<sup>3</sup> CZT detector crystal and low noise hybrid preamplifier in a housing measuring only 13mm diameter x 89mm in length. The probe includes a 2 meter long connecting input/output cable, for immediate use.

The CAPture® technology embodied in the SPEAR detector allows the detector to offer improved charge collection efficiency, thus allowing for photo-peak efficiency, along with reduced tailing and improved peak-to-valley ratio for easier isotope identification and quantification.

These improvements are all made without the use of complicated electronic systems and are ideally suited for portable applications where weight, power consumption, and size are important factors.

## SPEAR DETECTOR B2069



## Specifications

CZT detector crystal dimensions:	5x5x5mm <sup>3</sup> with CAPture® contacts
Measurement capabilities	
- Energy range:	10keV to 1MeV
- Energy resolution:	<4% FWHM @ 122keV
Operating temperature range:	-10° to +50°C standard
CAPture® Plus standard housing dimensions:	13mm dia. x 89mm
Cable lengths:	SHV HV output cable is 3'
	Lemo connector cable is 6'
	BNC output cable is 3'
SPEAR detector input requirements:	9 Pin Sub D connector +12VDC, ground
- SHV connector:	HV Bias +500V to +1000V
SPEAR detector signal output:	BNC connector, preamplifier output
SPEAR performance:	+ 7 to 12 VDC operation
- Input capacitance:	6.6pF
- Risetime @ C source:	1pF- 35nS
- Falltime @ C source:	1 pF - 725 μS
- Noise @ C source:	0pF - ~160 e <sup>-</sup> (Si)
- Sensitivity:	3.2 mV/fCoul
- Power dissipation:	130 mW (+ 12 VDC supply)

**NOTE: HV Power should be turned off when plugging and unplugging this unit**

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