

Model	Case size (mm)	Crystal size (mm)	Volume cm ²	Resolution (%@Cs137)	Weight (g)
SIGMA50	35x35x130	25.4x25.4x51	32.9	<7.2	315
SIGMA25	35x35x105	25.4x25.4x25.4	16.4	<7.2	215

USB powered 250 mW

Specification

Detector	1" x 1" x 2" Csl detector
Energy range	50 keV to 2 MeV
Energy resolution	<7.2% at 662 keV at 21°C operation
Number of channels	4096 (12 bit)
Dimensions	34.5mm x 34.5mm x 130.7mm
Operational temperature range	-10° to 40°C



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MAL-OPS-0894 Rev 4

SIGMA-50[®] & SIGMA-25[®] User Guide

The SIGMA-50[®] and 25[®] are intended to be used in conjunction with Kromek's K-Spect[®] and MultiSpect Analysis[®] software running on a Windows-based (7, 8 & 10) PC and tablet.

It connects to and is powered via the computer USB and requires no external power supply.

Inside the SIGMA-50[®], signals from the CsI detector are processed and digitized, and the digitized pulse height data is transferred to the computer via the USB.

The software receives the data and performs the spectrum acquisition, display, analysis and storage functions. The SIGMA-50[®] together with K-Spect[®] or MultiSpect Analysis[®] software form a complete gamma-ray spectroscopy system.

K-Spect is provided free of charge.

To download: Go to <http://bit.ly/KSPECT>

- Scroll down and enter your details
- Kromek will send you an email with the download instructions.

K-Spect[®] / MultiSpect Analysis[®] Software Installation

1. Installing software

- Open the downloaded zip file
- Open the "Full" folder
- Double-click or run the Setup.exe file
- Follow the on-screen instructions

2. Run the Software

Double click the desktop shortcut or select the required program from the Windows 'Start' menu. The application window will appear with a blank spectrum displayed.

SIGMA-50 Operation

Connect the SIGMA-50 to the computer USB port using the cable supplied with the unit. Any standard USB cable with a mini-B 5-pin connector will work.

Within a few seconds, the software will recognize the SIGMA-50 and a "Connected Detectors" window will appear, check the serial number is correct and click "OK".

After the SIGMA-50 has been connected for about one minute, valid signals are generated and spectra can be acquired. For best performance, the unit should be allowed to stabilize for about 1 minute before use.

Click the "Acquire" button to start acquiring a spectrum. The gain of the system is fixed so that the full spectrum is always acquired, with full scale (4096 channels) equal to 2 MeV. The LLD (lower level discriminator) can be set by selecting "Set Up", then "Device Settings" and then "Set LLD".

The LLD should not be set lower than channel 80.

The cursor will change color to red and a "Set LLD" label will appear. Move the LLD as desired to cut out low-energy part of the spectrum or the noise peak. More details on the operation of K-Spect and MultiSpect Analysis can be found under the 'Help' menu.

