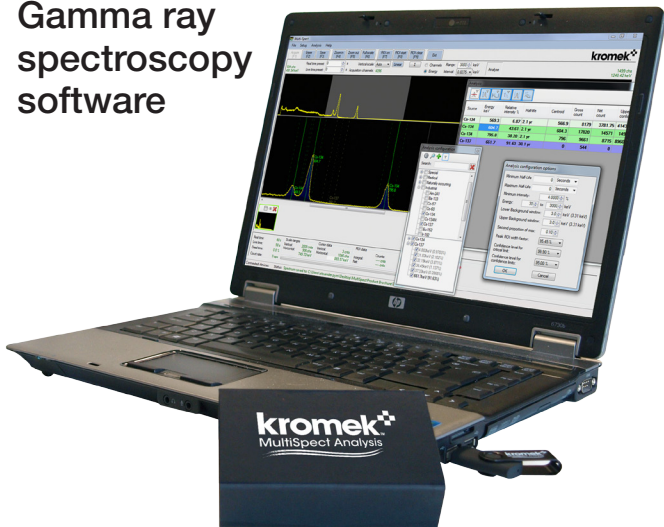


MultiSpect Analysis®

Gamma ray spectroscopy software



Main features

- Identification of complex samples
- Measure the peak properties and save data reports in .pdf and .csv format
- Clear colouring of the analysis results for statistical significance
- Connects and acquires from multiple detectors simultaneously
- Easily apply filters for viewing the important data
- Connects with GR1-A®, GR1®, SIGMA® and TN15® via USB
- Library of gamma ray emissions from over 400 nuclides
- Save spectra in the industry standard .spe file format
- Advanced radionuclide analysis functions
- Directly import measurements from RayMon10®
- Inbuilt scripting allowing automation with C# code

kromek
detect image identify

MultiSpect Analysis® Specialised gamma ray spectroscopy software for analysis of complex samples for radionuclide identification

MultiSpect Analysis® has been designed specifically for Kromek's range of radiation detectors on Windows® (7, 8,10) -based PC and tablets. It allows multiple detectors to be connected and managed.

Acquisition from all detectors can be performed and displayed simultaneously, either viewing separate spectra or combining the results together in a single spectrum. Thumbnails are used to give an easy visualisation of the signals from each detector. Spectra can be displayed on an energy axis for fast and direct comparison of data.

*Multiple detectors and simultaneous acquisition
Analysis results:*

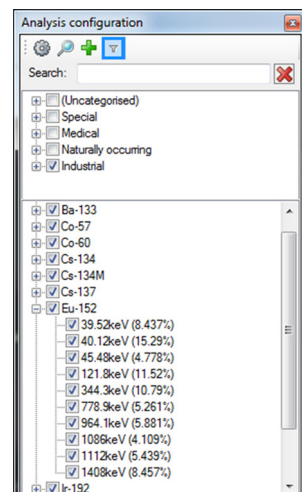
Source	Energy (keV)	Relative intensity (%)	Half-life	Centroid (keV)	Gross count	Net count	Upper confidence	Lower confidence	FWHM (keV)	FWHM (keV)	FW Ratio
Ca-134	569.3	6.87	2.1 yr	569.7	1632	580.5	745.7723	415.2277	11.09	21.81	0.5083
Ca-134	604.7	43.61	2.1 yr	606.6	3261	2121				25.88	0.4815
Ca-134	795.8	38.20	2.1 yr	798.2	1741	1354	1475.1557	1232.8443	12.39	28.32	0.4374
Ca-137	661.7	91.63	30.1 yr		0	125	0	0	0	0	0

Colour coded results showing which lines are above the critical limit of the information.

Filter by critical limit, relative intensity of the emission lines, energy windows and half life

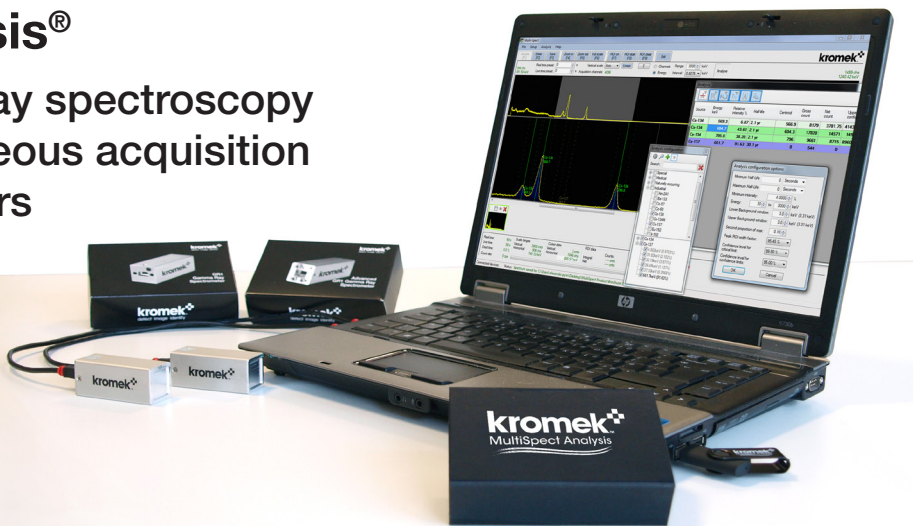
Included within MultiSpect Analysis® is a user-configurable library of over 400 radionuclides. Results from matching spectra to the library are colour coded according to statistical significance for easy visual processing. The analysis results can be filtered easily and sorted to find the required information.

Analysis of the spectrum gives all the measured peak information and can be exported in .csv format for use in other applications.



MultiSpect Analysis[®]

Specialised gamma ray spectroscopy software for simultaneous acquisition from multiple detectors with advanced radionuclide analysis functions



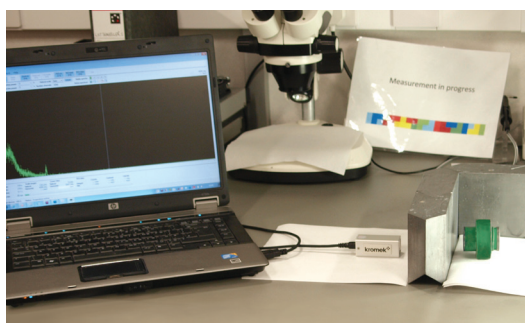
Applications



Health Physics



InSitu Monitoring



Nuclear Spectroscopy



Nuclear Industry

Feature	K-Spect	MultiSpect Analysis	MultiSpect Premium
Spectral acquisition from single GR1, GR1-A, SIGMA or TN15	✓	✓	✓
Spectral acquisition from multiple detectors of the same type simultaneously	✗	✓	✓
Polynomial energy calibration	✓	✓	✓
Efficiency calibration	✗	✗	✓
Display multiple detector information and more than 5 saved spectra	✗	✓	✓
Display calibrated spectra at the same energy scales to allow comparison	✗	✓	✓
Compatible with K102 Multichannel Analyser	✓	✓	✓
Thumbnail indication of loaded spectra	✓	✓	✓
Ability to save spectra in SPE, CSV or N42.42 formats	✓	✓	✓
Ability to export data	✓	✓	✓
Ability to save detector calibration information	✓	✓	✓
Association of calibration data with particular detectors by serial number	✓	✓	✓
Aggregation of multiple spectra	✗	✓	✓
Built in library of 416 isotopes	✗	✓	✓
Custom radionuclides	✗	✓	✓
Industry standard categorisation of isotopes	✗	✓	✓
Import from RayMon10 [®]	✗	✓	✓
Multiple regions of interest	✓	✓	✓
Automated peak analysis	✗	✓	✓
Quantitative analysis	✗	✗	✓
Gaussian peak fitting	✓	✓	✓

Drivers are available for both Windows[®] (7, 8, 10) and Linux[®] operating systems

MultiSpect Analysis Software

MultiSpect Analysis[®] software is written specifically for Kromek's range of CZT-based semiconductor and scintillator radiation detectors for use with Windows[®] (7, 8, 10) -based PCs or tablets.

MultiSpect Analysis[®] is Kromek's feature-rich software. It receives the data and performs the spectrum acquisition, display, analysis and storage functions.

Signals from the detectors are processed and digitized, and the pulse height data is transferred to the computer via USB.

MultiSpect Analysis[®] allows users to acquire and display live spectra from multiple devices simultaneously alongside saved spectra from previous measurements. It also enables grouping and summing of individual spectra plus the ability to match spectra to an on-board library of over 400 nuclides.

Kromek's new generation of nuclear threat detection products...



SIGMA-50 (L) high sensitivity scintillator detector and TN15 (R) high sensitivity non-Helium³ neutron detector

MultiSpect Analysis Premium[®] provides the added benefit of efficiency calibration to enable quantitative analysis ideally suited to data collected in any fixed geometry such as marinelli beakers.

Analysis results:

Filter by critical limit, relative intensity of the emission lines, energy windows and half life.

Colour coded results showing which lines are above a statistical critical limit.

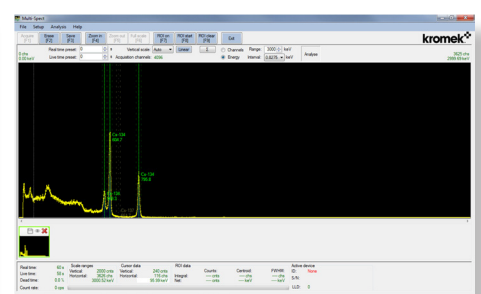
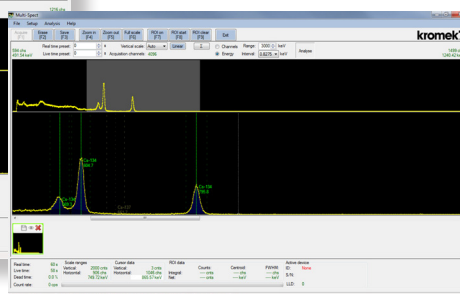
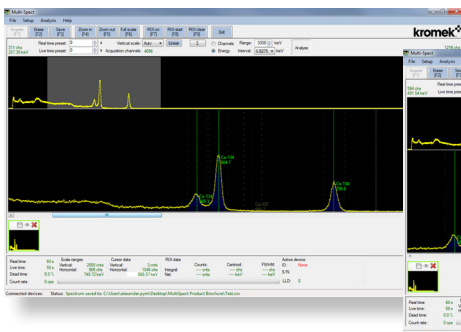
Source	Energy (keV)	Relative intensity %	Half-life	Centroid (keV)	Gross count	Net count	Upper confidence	Lower confidence	FWHM (keV)	FWHM (keV)	FW Ratio
Cs-134	569.3	6.87	2.1 yr	569.7	1692	580.5	745.7723	415.2277	11.09	21.81	0.5083
Cs-134	604.7	43.61	2.1 yr	606.6	3261	2121	Peak detected above critical limit (99.9%)				
Cs-134	795.8	38.20	2.1 yr	798.2	1741	1354	1475.1557	1232.8443	12.39	28.32	0.4374
Cs-137	661.7	91.63	30.1 yr	0	125	0	0	0	0	0	0

Export of the analysis results gives an easy to use .csv form of the analysis data including:

- Peak identification
- Centroid
- FWHM
- FW ratio
- Source activity *
- Gross Counts
- Net Counts
- Stapleton Critical Limit
- Upper and lower confidence limits
- Equations and parameters of the subtracted background
- Clear details of the peak and background region edge locations.

User configurable library of radionuclide emissions:

Configuration options for the analysis based on statistical significance



* Premium edition only

Manual Efficiency Calibration for Activity Analysis

1. Acquire a spectrum from a calibrated radioactive source

2. New 'Efficiency Calibration' tab in 'Device Settings'

3. Click 'Add Cursor Point' to calculate efficiency from the acquired spectrum at the position of the cursor

4. Select the radionuclide

5. Enter the source activity and MultiSpect calculates the efficiency value

6. Choose the equation for fitting the data

7. View the fit confidence limits graphically to check the quality of the calibration, then save as a "Favourite" for future use

8. Calculate the activity of any radioactive source measured in the same geometry

Source	Energy (keV)	Relative Intensity %	Net Count Rate (cps)	Source Activity (Bq)	Activity Upper Confidence (Bq)	Activity Lower Confidence (Bq)
Ca-137	661.7	91.63	107.50	398317	436334	360299



**Nuclear
detection**



**Medical
imaging**



**Security
screening**

detect image identify

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