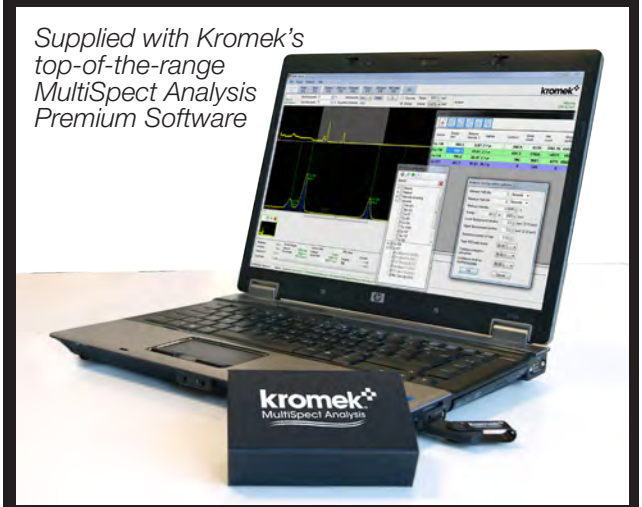
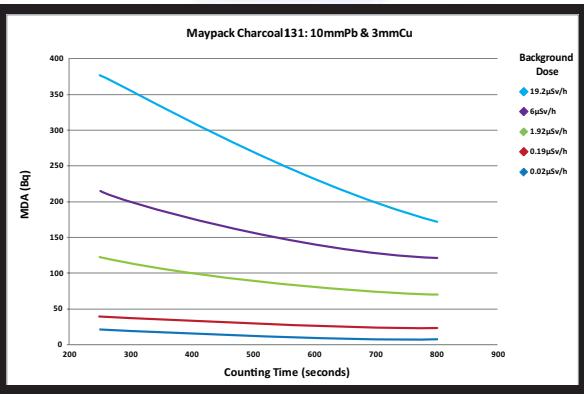
High accuracy and precision

Applications include:

- Environmental Monitoring
- Decommissioning
- Waste Disposal
- Food Inspection

Supplied with Kromek's top-of-the-range MultiSpect Analysis Premium Software





kromek
detect image identify

Quant for GR1®

Unique Solution for Mobile Laboratory Radionuclide Analysis

Quant for GR1® (Q4-GR1)® is a unique solution for measuring the activity of radionuclides in filters, filter papers and beakers.

The low power, small form factor, reliability, and no requirement for cooling, enable measurements of various configurations of samples, without the need for time consuming transport back to offsite laboratory.

Q4-GR1 utilises mature Cadmium Zinc Telluride (CZT) technology, provides less than 2% energy resolution, unmatched by conventional scintillator detector based instruments such as LaBr3 and NaI. This high resolution performance enables clear separation of gamma energy peaks within complex mixed radionuclide samples for accurate quantification of individual radionuclides without the need for chemical separation.

Q4-GR1 comes with an optimised and integrated lead/copper shield that enables operation in both standard and raised backgrounds. The enhanced lid locking mechanism has a simple-to-use push switch, which offers positive and secure closing.

Specifications

Detector Resolution	<2%
Energy Range	30keV to 3MeV
Number of channels	4096
Weight	22kg
Power Consumption	Powered via mains
Dimensions	300mm diameter x 210mm height
Lead/Copper Shield	10mm/3mm
Number of selectable radionuclides as standard	47
Counting Time	User Configurable
Temperature	0-50°C

MultiSpect Analysis Premium® Software

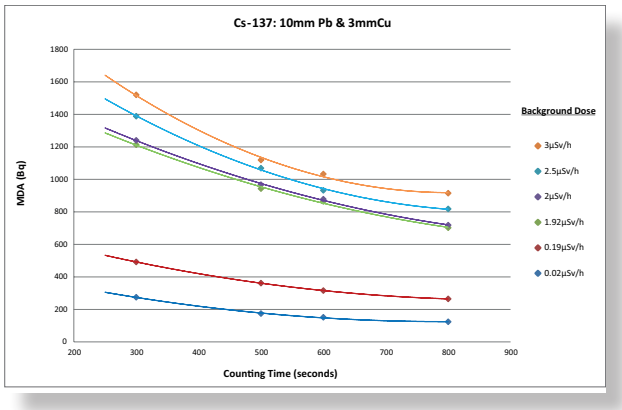
Q4-GR1® comes pre-loaded on a Windows-based laptop with MultiSpect Analysis Premium which includes a dedicated Quantitative Activity Analysis module. It enables full spectrum visualisation, radionuclide identification and activity analysis with adjustable confidence levels.

The results are stored within a database that can be exported to CSV file format, and reports output to PDF.

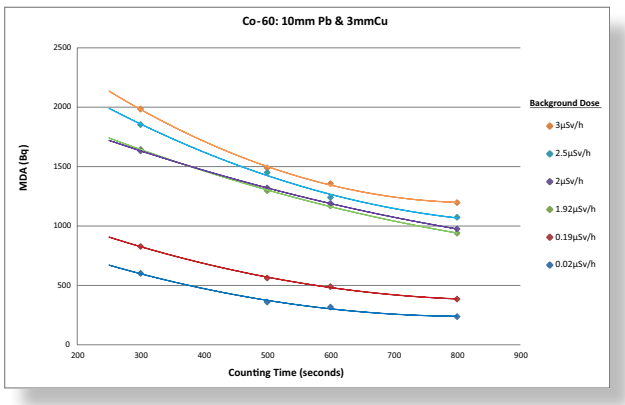
Pre-defined sample types are:

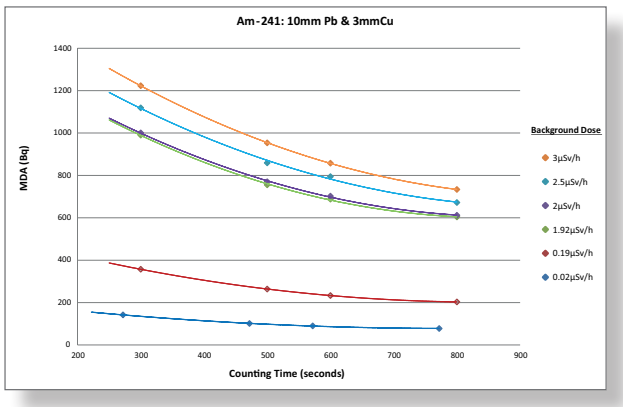
- Standard Maypack filter
- Filter papers
- Maypack charcoal
- Efficiency optimised beaker filled with distributed material
- Calibration source

Maypack not included, requires separate purchase



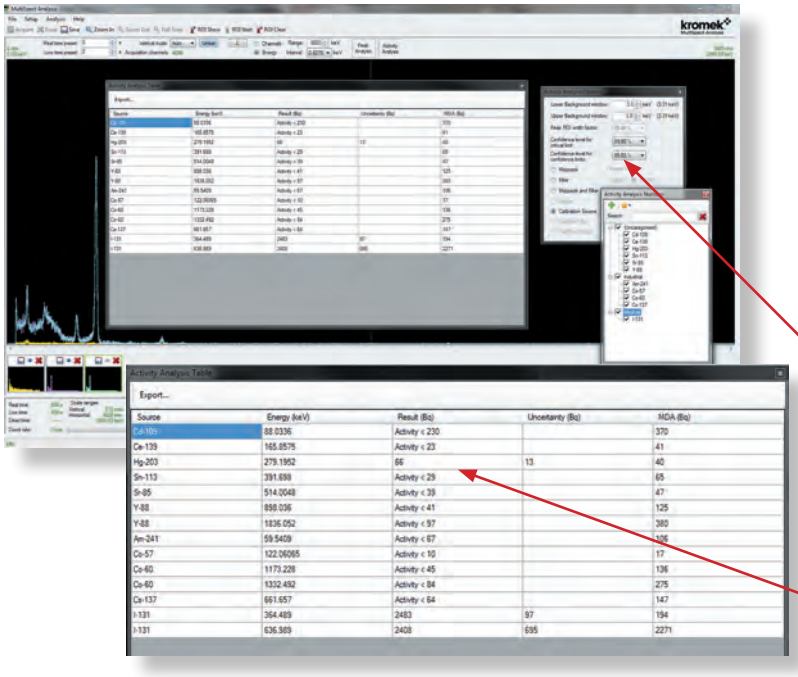
MDA for 1 litre beaker with background doses for various sources

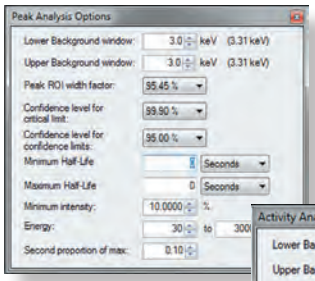




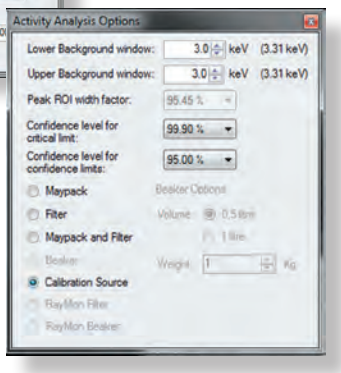
Some of MultiSpect Analysis Premium® Key Features	
User definable confidence limits	✓
Predefined samples	✓
Quant library of 50 nuclides	✓
User customisable libraries	✓
Display calibrated spectra at the same energy scales to allow comparison	✓
Thumbnail indication of loaded spectra	✓
Ability to save spectra in SPE or CSV 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 into one spectrum	✓
Built in library of 416 isotopes	✓
Industry standard categorisation of isotopes	✓
Automated peak analysis of Spectra	✓

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



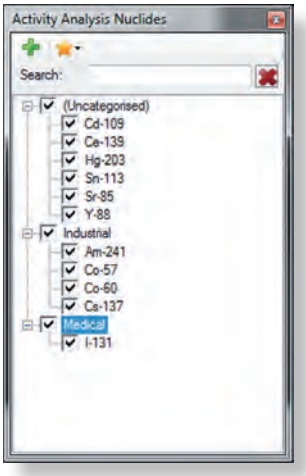


Configuration options for the analysis based on statistical significance.



Activity Analysis Options allow the user to select sample type and required statistics

Activity Analysis Table displays the result, uncertainty and MDA of each selected radionuclide with the ability to export to CSV



User configurable radionuclide library

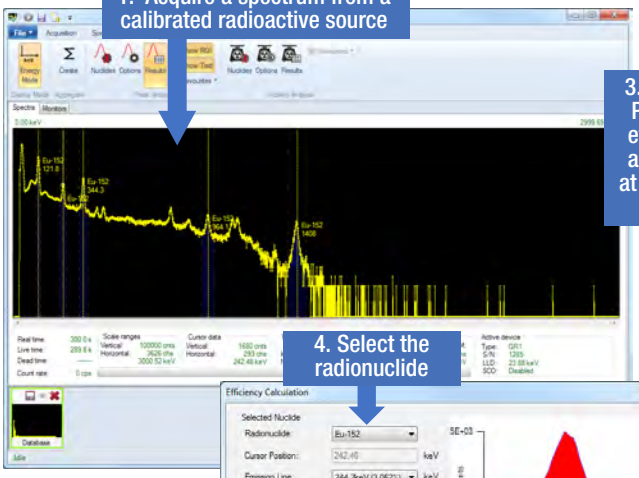
MultiSpect Analysis Premium® offers predefined Quant for GR1 geometries with hard-coded efficiency factors for activity analysis.

Manual Efficiency Calibration

Where the detector and radioactive sources are used in a fixed geometry, an efficiency calibration of the system can be used, together with the measured count rates in spectrum peaks, to calculate source activity. Tools are provided allowing the user to determine the efficiency of their system using a calibration source of known activity.

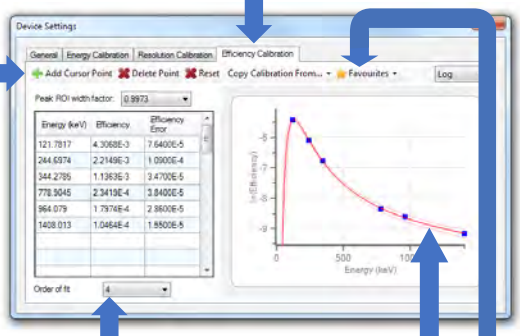
Manual Efficiency Calibration for Activity Analysis

1. Acquire a spectrum from a calibrated radioactive source

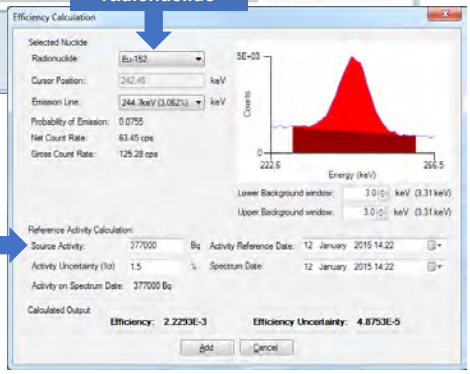


2. New 'Efficiency Calibration' tab in 'Device Settings'

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



4. Select the radionuclide

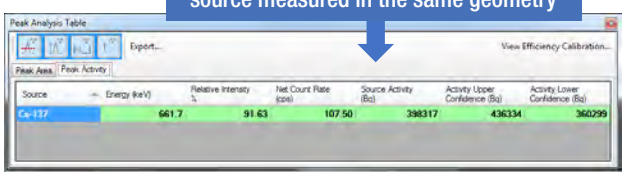


5. Enter the source activity and MultiSpect calculates the efficiency value

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



Optional upgrade:

Upgrade laptop to semi-rugged tablet,
12V operation and vehicle mount for in-vehicle use

Options and upgrades

Standard kit includes:

- Q4GR1 Quant pot including optimised background shield
- GR1+ <2% resolution
- Windows-based laptop with MultiSpect Analysis with Activity Analysis preinstalled
- Maypack filter attachment

Optional upgrade:

Semi-rugged tablet (Q4GR1 TAB) upgrade laptop to semi-rugged tablet

Q4-GR1 is now available with a 10.1" semi-rugged tablet designed for mobile workers for use in various locations.

Semi-rugged Tablet

With its entire chassis sealed against water and ingress protection up to IP43, the tablet meets stringent MIL-STD-810G tests.

- MIL-STD-810G drop protection from 4 feet (120cm)
- MIL-STD-810G and ASTM D4 169-08 protection against vibration
- Wide humidity operating: 5% ~ 95%
- Wide temperature operating: 0°C ~ +45°C
- Internal magnesium alloy frame
- 12V operation for in-vehicle use
- Vehicle mount

Accessories:

- **Quant B-1000** – pack of five, one litre beakers
- **Quant B-C** – custom size beaker available on request

Please note: beaker not included, requires separate purchase

ISO 9001
SYSTEM CERTIFIED

CE

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Q4GR1 A4E SPF-DOC-1224 Rev7