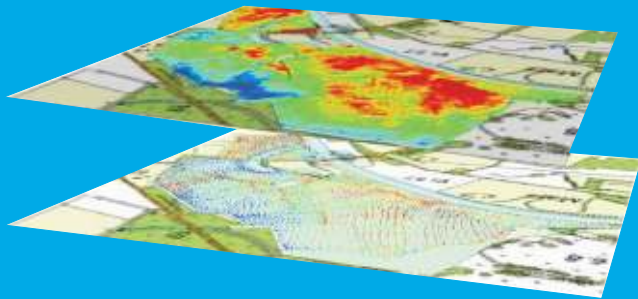




# Handheld Gamma spectrometers

product information

*mineral prospecting made easy*



## Rapid mapping of large areas

A gamma sensor measures the concentration of a number of (naturally occurring) radioactive trace metals. Precise measurement of these concentrations, combined with GPS, reveals otherwise unseen spatial differences in clay content, grain size, mineral composition (e.g. heavy minerals like zircons, monazite) and uranium occurrences. The gamma sensor is passive; it receives the radiation emitted by the trace elements in soil from a maximum depth of 50cm.

## Applications

- Mining and exploration
- Agriculture
- Civil engineering
- Geological mapping

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- Radionuclide mapping
- Soil Sampling
- Easy to use
- GPS integrated
- High data quality

# The full spectrum in your hands

**T**he Medusa hand-held detector is a small, gamma-ray detector system for rapid in-situ mapping of radionuclides in soil, rock and sediments. The system uses an advanced full-spectrum data analysis method to measure radionuclide concentrations at unprecedented quality. In fact, you have the full gamma spectrum in your hands!

The system comprises a scintillator detector mounted on a 512 channel multichannel analyzer with built-in high-voltage supply. The unit is mounted inside a rugged, watertight casing. The unit is completed by a differential GPS system, for on-line logging of the position of the measurement.

Readout is performed by a rugged notebook. Logging software is provided integrating the readout of the detector system and the GPS system. For each acquired GPS position, a corresponding gamma spectrum is logged and analysed to the concentrations of  $^{40}\text{K}$ ,  $^{238}\text{U}$ ,  $^{232}\text{Th}$ .

## High data quality

Our data processing software uses the complete gamma spectrum to determine the concentrations of (natural) radionuclides. This patented method, combined with high-efficiency scintillators (CsI, BGO) assures high data quality especially for low-volume detector systems.

## Sample analysis in the field

The software allows for on-site background corrections. This gives the opportunity to analyse the radionuclide concentrations of rock samples in the field! The point logging mode stores the measured values in a spreadsheet for later use.

## Rapid mapping of large areas

The continuous mode integrates dGPS coordinates with the measured concentrations of radionuclides. The system can be stored in a back-pack or can be mounted on a quad for a rapid mapping of the soil and rock composition.

## Technical specs

### Hardware

- Single 3x3" CsI scintillator detector
- WAAS-EGNOS enabled 5Hz dGPS
- Light-weight, rugged PC datalogger with touch screen

### Logging Software

- Straightforward (touchscreen) operation
- Clear status overview
- Automated detector gain control
- Continuous logging mode
- Point logging mode

### Data processing software

- Model uses complete gammaspectrum to improve dataquality by factor 2-5 compared to standard systems
- Absolute system calibration using full Monte Carlo simulation (MCNPx code)
- Data presented as ppm or Bq/kg
- Raw measurements are stored and can be used for detailed off-line analysis

