

RT-30

Gamma-Ray spectrometer with Nuclide ID capability

A highly sensitive instrument providing search, scan and nuclide identification in one compact unit.

The RT-30 Spectrometer is the state-of-the art in portable nuclide ID instrumentation. It offers an integrated design with a large detector and built-in large data memory. It offers weather protection with ease of use. In addition it has bluetooth connectivity providing for wireless connection to external GPS receiver, earphone or computer.

Applications



The compact RT-30 unit includes a large (103 cm³) NaI detector, a 1024 channel spectrometer and a powerful processor. The mechanical design provides ease of use, weather protection as well as shock protection. It is particularly suitable for demanding environments such as steel mills, scrap recycling yards or border crossings.

All functions are handled with one button on the handle. Bluetooth (BT) simplifies data transfer, reporting and – if required – storage of GPS coordinates with the survey data. The scan function allows for surface mapping.

The RT-30 spectrometer is auto-stabilizing on the naturally occurring (K, Th and U) radioactivity and does not require any test sources.

Isotope library

Am-241, Ba-133, Cr-51, Co-57, Co-60, Cs-137, Ga-67, I-131,
In-111, Ir-192, K-40, Ra-226, Tc-99m, Tl-201, Sr-85,
Th-232, U-235, U-233, Pu-239



Features

- High sensitivity with large NaI detector 2 x 2" (103 cm³)
- Lightweight and rugged, 2 kg, including batteries
- Easy to learn and use, single button operation.
- Three functions: Search, Scan and Nuclide ID
- Auto-stabilization, no radioactive sources required for proper operation
- 5-digit LCD display with high count rate – 65 535 cps. Scrolling histogram graph display of last 100 readings
- Fast audio output with adjustable audio threshold set point – BT Earphone audio support for noisy area surveying
- Full IP&& weather proofing with protection against streaming water and fully dust protected
- Bluetooth and USB equipped with external GPS integrated into data stream via BT
- Low power, 4 x AA batteries, typical 8-12 hours battery life at 20 °C

Standard accessories

RT-30 Spectrometer with carrying handle
Removable protective boot with shoulder strap
Battery cartridge with 4 x AA rechargeable batteries & charger
Spare battery holder cartridge
Geo-view utility software
USB cable and User guide



RT-30 comes with a protective boot and shoulder strap

Search mode

The large (103 cm³) detector more than 50% bigger than older technology units gives the user a very high level of system sensitivity. The unit has a front panel display with a large 5 digit easy-to-read display, updating at a 1/sec rate for easy source location. The integrated Audio system scans at a 20/sec data rate for fast easy eyes-free searching. In noisy areas users can utilize the Bluetooth linked audio headset for easy-to-hear operation.

Nuclide Identification Mode

The Nuclide Identification mode provides direct Identification of any radioactive material present in a relatively short period. The large detector gives higher levels of performance and faster ID.

Scan Mode

The unit has an integrated mapping capability using an external GPS that is integrated via Bluetooth. This scan capability enables the users to move through a large area with the unit recording data at typically a 1/sec rate with GPS location. Companion software then permits a map to be made thus giving the user the capability of mapping their facility on a regular basis to check for missed sources.

Software

The RT-30 is provided with utility software running on the users' PC to download the data that is stored in memory and interface to the unit for parameter setup etc. All data in memory is output via Bluetooth or USB to the "RS Analyst" program. This may take the form of 1024 channel spectra, Nuclide ID data or Scan data + GPS.

The software also gives graphical and numeric views of the data. The data can also be re-exported as a text file for further processing.

System specifications

- Temperature Range: -20°C to +50°C
- Control: Single one button, thumb activated
- Alarms:
 - Audio via miniature speaker
 - Variable audio threshold set point
 - Audio proportional to count rate
- Weight: - 2 kg including batteries
- Size & Package Style:
 - 259 mm x 81 mm x 96 mm
 - 1 mm rugged aluminium outer case
 - Supplied with an integrated handle for easy carry
 - Slip on carry harness gives additional protection and easy carry capability
- Memory: 2MB, memory can be partitioned for desired storage. Typically set for :
 - Scan Total Count only - 94 000 readings
 - Scan + Nuclide Identification 1000+ readings
 - Nuclide Identification only: 400+ readings
- Data Input / Output:
 - USB or Bluetooth (BT)
- Display:
 - 128 x 64 pixels, 29 x 60 mm
 - Graphic LCD display with white backlight and automatic dimming
- Readout:
 - Search mode: : 0 – 65535 cps
 - Nuclide identification mode: *Isotope name*

Energy Response: 20 keV to 3072 keV

Internal Sampling for Audio Analysis: 20 / second

Batteries:

Internal battery pack module (4xAA) easily replaceable

Rechargeable or alkaline. Battery life — 8 + hours at 20°C

- Energy compensated dose rate:
 - 0 – 10 mSv/h (with G/M detector)
- Sensitivity
 - For Co-60: 270 cps/MBq
 - For Cs-137: 160 cps/MBq
 - For Am-241: 75 cps/MBq
- Optional Neutron detector: He-3 0.45" x 2.5"