

Isotope Identifier with external detector : Model 702e



The Model 702e Integrated Spectroscopy with External Detector was developed to give end users like first responders a simple tool to quickly locate any abnormal levels of radioactivity and accurately identify the isotopes present.

It employs time-slicing and patented Quadratic Compression Conversion (QCC) technology that delivers improved energy resolution, real-time background subtraction, and the highest degree of sensitivity.

These instruments were the very first ones designed to meet ANSI N42.34 Performance Criteria for Handheld Instruments for the Detection and Identification of Radionuclides. The design was also optimized for portability, user-friendliness, and rugged use out in the field.

All captured spectra data are stored to a removable compact flash card in ANSI N42.42 standard format. This convenient storage medium permits quick review of data as well as allowing virtually an unlimited number of spectra to be collected while in the field.

This instrument is powered with rechargeable NiMH batteries delivering up to eight hours of portable use.

Applications: Medical and Health Physics - Industry - Waste Monitoring - Emergency (Firefighters - Police - Customs) - Radiation Safety

Specifications

Functions: nuclide identification, spectrum analysis, dose rate calculation (rem/hr or Sv/h), total dose, audible search tool.

Integrated Electronics: digital signal-processing MCA

ADC:

- Type: base converter 14-bit pipelined-flash
- Conv. Modes: Linear 256, 512, 1024
- QCC 256, 512 (U.S. Patent 5,608,222)
- LLD/ULD: 0-100% of FS adjustable in less than .01% steps
- -5% to +5% of full scale, digitally adjustable

Pulse Processor: trapezoidal filter with adjustable time constant and pulse shape discrimination

Gain: 0.5 to 16.0

Detector: NaI(Tl), externally housed, 5.1 x 5.1 cm (2 x 2 in.) (D x L)

Energy Range: 18 keV – 3 MeV

Energy Resolution: 7.5 to 8.5% (¹³⁷Cs)

Sensitivity: 900 cpm/μR/h (¹³⁷Cs)

Display: 320 x 240 high brightness, 32,000-color, 89 cm (3.5 in.) transfective LCD display

I/O: RJ-45 Ethernet port

Power: 8 standard NiMH rechargeable AA batteries and spare battery holder included; alkaline AAs can also be used. Universal AC power adapter included.

Water/Dust Resistance: IP56

Temperature Range: -20 to 50 °C (-4 to 122 °F)

Trigger Lists: multiple trigger lists can be selected for different applications, including standard DHS isotopes, medical, industrial, or user-defined lists.

Setup Options: can be password-protected for use by non-technical personnel

Calibration: automatic calibration (temperature) stabilization with low-level ⁴⁰K source. Coarse and fine energy calibration and dose-rate calibration done at factory, but available for expert users.

Clock: battery-backed, real-time clock/calendar

Controls:

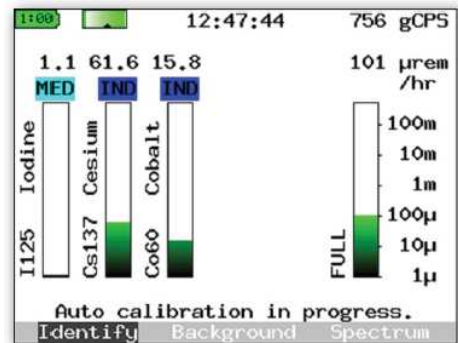
- Handle Keypad: three buttons for screen controls (Left, Right, and Enter function)
- Instrument Body keypad has four buttons for
 - instrument On/Off and ACKnowledgement
 - Up key
 - Down key
 - Menu key

Alarm: visual (on screen) and audio (internal speaker or optional headphones)

Dimensions: 16.5 x 11.4 x 22.8 cm (6.5 x 4.5 x 9 in.) (H x W x L); 21.6 cm (8.5 in.) height with handle

Weight: 2.8 kg (6.1 lb) with batteries

9 cm LCD Display



Continuously displays the detected isotopes, class, and dose rate for physics-oriented user.

Key Features

- Single-Handed Operation
- Identifies Mixed Isotopes in One Second
- Provides Total Dose Rate & Dose Rate by Isotope Instantly
- Externally NaI Detector
- Ethernet Connectivity for Remote Operation
- User and Administrator Operating Modes
- Sunlight-Readable LCD
- Compact Flash Card Spectra Storage
- Quadratic Compression Conversion (QCC)



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