

Model 703e Isotope Identifier with External Detector

Key Features

- Identifies Mixed Isotopes in One Second
- Instantly Provides Total Dose Rate & Dose Rate by Isotope
- Externally Housed 3 x 3 in. NaI Detector
- Ethernet Connectivity for Remote Operation

Additional Features

- Single-Handed Operation
- User and Administrator Operating Modes
- Sunlight Readable LCD
- Compact Flash Card Spectra Storage
- Quadratic Compression Conversion (QCC)

Applications

- Emergency Response
- Law Enforcement
- Homeland Security
- Undercover Surveillance
- Industrial & HAZMAT
- Medical & Health Physics
- Radiation Safety
- Passenger and Freight Monitoring
- Non-Proliferation Enforcement
- Environmental Waste Monitoring



Introduction

The Model 703e Isotope Identifier with an external NaI detector provides end users like first responders a simple tool to quickly locate any abnormal levels of radioactivity and accurately identify the isotopes present. It additionally offers several advanced features for well-trained experts seeking to perform more detailed analysis either in the field or in a laboratory. Connection to a PC is available via a built-in Ethernet connection where stored or real-time collected data can be processed by optional isotopic analysis programs, such as the Quantum software (available upon request).

The 700-Series employs time-slicing and patented QCC technology that delivers improved energy resolution, real-time background subtraction, and the highest degrees of sensitivity. These units have a trace amount of ^{40}K embedded to provide gain stabilization and self-calibration. All captured spectra data are stored to a removable compact flash card in ANSI N42.42 standard format. This convenient storage medium facilitates quick removal for review elsewhere as well as allowing virtually an unlimited number of spectra to be collected while in the field.

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.

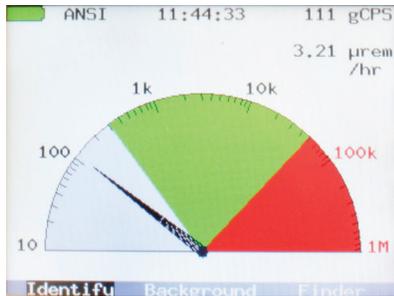
An ergonomic shape and excellent balance allow them to be operated with a single (gloved) hand with easy thumb access to a set of very large tactile type control buttons. The 8.9 cm (3.5 in.) color LCD is a transfective type, which actually brightens with use in bright sunlight conditions that typically render other types of LCDs useless. The use of color on the different displays is intelligently applied signifying the appropriate activity levels for capturing spectra, labeling isotope categories, and presenting alarms. Audible feedback and voice alerts further enhance the user interface. The instrument is powered with eight internal rechargeable AA NiMH batteries, and comes with a 35W, 12V or 15V universal adapter (depending on system revision), and has a 9V fused accessory adapter.

Ludlum Measurements, Inc. P.O. Box 810, Sweetwater, Texas 79556

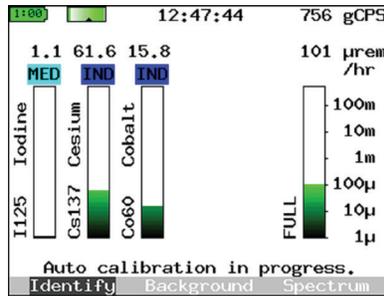
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Note: specifications subject to change without notification. We are not responsible for errors or omissions.

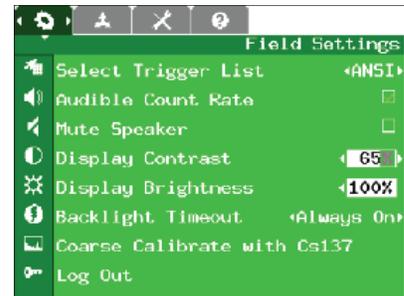
Sample Model 703e Screens



Quickly determines location of detected materials and where to collect data for further analysis.



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



Color-coded menus and icons make it easy to find options and stored data at the touch of a finger.

Specifications

Part Number: 48-4075

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

Detector: external NaI(Tl), 7.6 x 7.6 cm (3 x 3 in.) (D x L)

Sensitivity: 3800 cps per µSv/h (2300 cpm per µR/h) (¹³⁷Cs)

Energy Range: 18 keV to 3 MeV

Energy Resolution: 8 to 8.5% (¹³⁷Cs)

Integrated Electronics: digital signal-processing MCA

ADC:

- Type: base converter 14-bit pipelined-flash
- Conv. Modes: Linear - 256, 512, 1024 channels; QCC - 256, 512 channels (U.S. Patent 5,608,222)
- LLD/ULD: 0-100% of FS adjustable in less than 0.01% steps
- Zero: -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

Display: 320 x 240 high brightness, 32,000-color, 8.9 cm (3.5 in.) transfective LCD display

I/O: RJ-45 Ethernet port

Trigger Lists: multiple trigger lists can be selected for different applications, including standard ANSI isotopes, medical, industrial, or SNM

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: four buttons for controls (ON/OFF/ACK, Up, Down, Menu)

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

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

Water/Dust Resistance: IP56

Power:

Batteries: internal, 8 x 2450 mAh NiMH AA batteries

AC: 35W, 12V or 15V universal AC adapter (depending on system revision)

Auto: 9V fused accessory adapter

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: 3.4 kg (7.4 lb) with batteries

Options:

Car Power Adapter (4525-383): Power cord that plugs into a 12 V car power outlet.

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