

Model 711i

Isotopic Identifier/MicroR Meter



Ludlum Measurements, Inc.

Key Features

- Identifies Mixed Isotopes in One Second
- Provides Total Dose Rate & Dose Rate by Isotope Instantly
- Internally Housed LaBr Detector
- Ethernet Connectivity for Remote Operation
- High LaBr Detector Resolution

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



Part Number: 48-3967

Additional Features

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

Introduction

The portable Model 711i radiation surveillance and measurement system provides end users such as first responders a simple tool to quickly locate any abnormal levels of radioactivity and to 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 the stored or real-time collected data can be processed by optional isotopic analysis programs.

Like other Ludlum Model 700 Series Identifiers, 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 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.

The design is also optimized for portability, user-friendliness, and ruggedness for use in the field. The ergonomic shape and overall balance allow the controls to be operated with a single (gloved) hand, with easy thumb access to a set of large tactile type control buttons.

The 8.9 cm (3.5 in.) color LCD is a transreflective type, which actually brightens with use in bright sunlight conditions that typically render other types of LCDs useless. Colors used on the different displays are intelligently applied to signify the appropriate activity levels for capturing spectra, labeling isotope categories, and presenting alarms. Audible feedback and voice alerts further enhance the user interface.

The LaBr detector provides an extreme high resolution for ^{137}Cs at 661 KeV of 3.5% to 5%. This translates to a higher confidence level of isotope differentiation and identification than most other equipment that just use a NaI scintillator.

The instrument is powered with eight rechargeable AA NiMH batteries, and comes with a 35W 12V or 15V universal adapter (depending on revision), and has a 9V fused accessory adapter.

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

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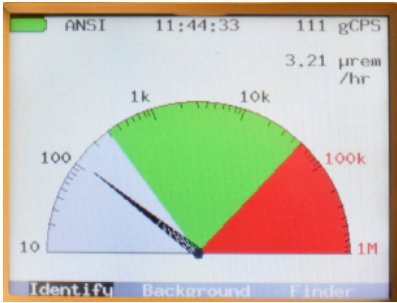
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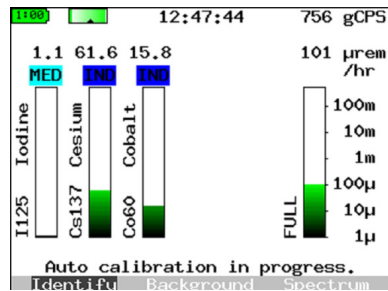


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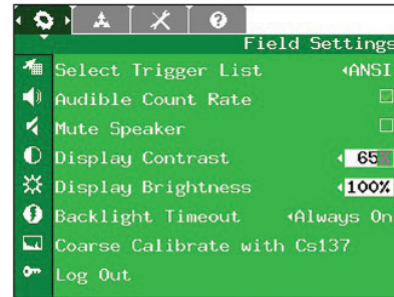
Sample Model 711i Screens



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



Continuously displays 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

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

Electronics: integrated 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 to 100% of FS adjustable in less than .01% steps
- Zero: $\pm 100\%$ of FS adjustable by channels

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

Gain: 0.5 to 16.0

Detector: LaBr, internally housed, 3.8 x 3.8 cm (1.5 x 1.5 in.) (D x L)

Energy Range: 18 keV – 3 MeV

Energy Resolution: approximately 3.5–4% (^{137}Cs)

Sensitivity: 600 cpm/ $\mu\text{R/h}$ (^{137}Cs)

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

I/O: 10/100 Ethernet port and optional RS-232 adapter cable

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 ^{40}K 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 4 buttons for instrument on/off and also acknowledgement
 - up key
 - down key
 - menu key

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

Dimensions: 25.1 x 11.4 x 22.1 cm (9.9 x 4.5 x 8.7 in.)

(H x W x D) with handle

Weight: 2.2 kg (4.8 lb) with batteries

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