

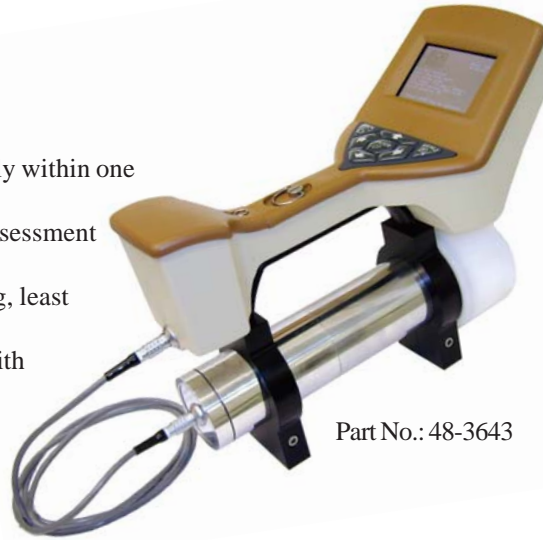
# *Model 702 Portable Radiation Surveillance and Measurement System*



*Ludlum Measurements, Inc.*

## **Features**

- ▶ Completely portable spectroscopy system in one hand
- ▶ Accurately identifies multiple radionuclides concurrently within one second (real time)
- ▶ Color-coded display and audio feed back give quick assessment of the threat class
- ▶ Multiple identification techniques including peak fitting, least squares analysis, and expert systems approaches
- ▶ Special Nuclear Material (SNM) detection, enhanced with neutron detection option
- ▶ Isotope-specific and total dose rate display
- ▶ User extensible nuclide library of nearly 100 isotopes
- ▶ Integrated analysis for ID and dose rate calculation
- ▶ Alarms, spectra, and configuration easily transferred to PC through Compact Flash card
- ▶ Stores thousands of spectra in ANSI N42.42 (Homeland Security) compliant data format
- ▶ Operates for over 8 hours on easy-to-swap AA batteries
- ▶ Calibration stabilization and watertight housing for use in all weather conditions
- ▶ International language support



Part No.: 48-3643

The portable Model 702 Radiation Surveillance and Measurement System was developed to give all users what they need – simple operation for the first responder who needs to react quickly, as well as detailed analyses for the technical user. Several modes of operation give all users the information they need right at their fingertips.

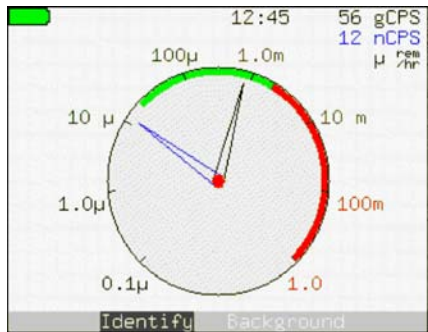
Upon power-up, the unit goes through a quick self-test and immediately begins monitoring; even after a lengthy power-down, temperature stabilization guarantees accurate identification results within the first five minutes. Manual recalibration is rarely required.

The Model 702 builds on the proprietary time-slicing and Quadratic Compression (QCC) techniques of its predecessors with new pattern-recognition algorithms to give fast and accurate identification even for difficult isotopes.

## **Applications**

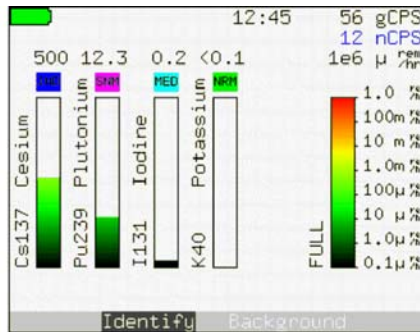
- ▶ Emergency Response
- ▶ Law Enforcement
- ▶ Homeland Security
- ▶ Undercover Surveillance
- ▶ HAZMAT
- ▶ Industrial
- ▶ Medical
- ▶ Radiation Safety
- ▶ Passenger and Freight Monitoring
- ▶ Non-proliferation Enforcement
- ▶ Health Physics
- ▶ Environmental Waste Monitoring

## Speedy Search



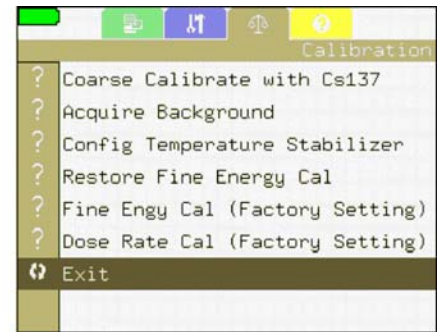
Quickly determines location of detected materials and where to collect data for further analysis.

## Real-Time Dose



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

## Intuitive Interface



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

### Features

#### Functions

Nuclide identification, spectrum analysis, dose rate calculation (rem/Sv), audible search tool.

#### Integrated Electronics

Digital signal-processing MCA

#### Detachable Detector

2" x 2" NaI detector

Detector has integral HV bias supply..

#### Physical and Environmental Specifications

**Weight:** 5 lbs.

**Dimensions:** 12" L x 4" H x 5" W (excluding detector)

#### System Specifications

##### Energy Range

18 keV – 3 MeV

##### Pulse Processor

Trapezoidal filter with adjustable time constant and pulse shape discrimination. Gain 0.5 to 16.0.

#### Special Features

##### Patented Technology

*Quadratic Compression Conversion (QCC)* allows for identification of mixed isotopes in one second.

*Hysteresis:* Provides 97% I.D. confidence level in 2 seconds.

##### Customizability

Modifications of isotopes and their associated energy lines

can be done either in the field or using Microsoft Excel®.

Essentially no limit to number of isotopes or lines.

Sound and language preferences user settable.

#### Controller

**Display:** 320x240 high brightness 32000-color

3.5" transfective LCD display

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

#### Batteries and Accessories

**Power:** 8 standard NiMH AA batteries and spare battery

holder included; alkaline AAs can also be used.

Universal AC power adapter included.

**Water/Dust Resitance:** IP56

**Temperature Range:** -20 to 50°C

#### 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 < .01% steps

Zero: ±100% of FS adjustable by channels

#### Trigger Lists

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

#### Ease of Use

Different types of displays for different types of users.

Setup options can be password-protected for use by non-technical personnel.

#### Calibration

Automatic calibration (temperature) stabilization with low-level Cs-137 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:** 7-key custom keypad with one-thumb operation.

**Alarm:** Visual (on screen) and Audio (internal speaker or optional headphones)

#### Accessories

Neutron Detector (July 2008)

Personal Computer

5' (152 cm) detector cable

Headphones and headphone adapter

Spare set of eight (8) rechargeable batteries

External AC battery charger

GPS - adds coordinates to screens and spectrum