

# Model 2241-2RK

## Emergency Response Kit



Ludlum Measurements, Inc.

### Features

- Ready-to-Go Kit Packaged in Rugged Case
- Auto-Ranging Digital Ratemeter with Built-In Scaler
- Measures Alpha, Beta, and Gamma Contamination
- Includes a High-Sensitivity Gamma Probe for Quickly Locating Sources of Radiation
- Audible & Visual Alarms



Part Number: 48-2829

### Introduction

The Model 2241-2RK Emergency Response Kit enables a rapid response to a radiological emergency by packaging the radiation measurement tools that you're likely to need into one convenient transport/storage case. The kit features the digital, versatile, and auto-ranging Model 2241-2 Ratemeter/Scaler that can measure exposure, contamination, and samples. Also included is a Model 44-9 GM pancake-type detector, Model 44-2 scintillator detector, a 1 m (39 in.) cable, check source, and check source holder, and batteries.

Responders can attach either the Model 44-9 alpha/beta gamma GM pancake probe for contamination and sample measurements, or the Model 44-2 high-sensitivity gamma scintillator detector for locating the source of the high readings. A locking toggle switch selects the correct set of operating parameters for the connected detector to optimize the measurement. The air- and watertight carrying case supplied is foam padded with cutouts for each device for secure transport and storage of the equipment.

#### Model 2241-2 Ratemeter/Scaler

**APPLICATION:** alpha, beta, and gamma surveys

**DISPLAY:** 4-digit LCD with two-digit overflow (scaler mode), 1.3 cm (0.5 in.) high digits, separate annunciators for display units, alert, alarm, low battery, detector overload, counting overflow, and scaler counting

**DISPLAY RANGE:** autoranging from 0.0  $\mu\text{R/hr}$ –9999 R/hr; 0.000  $\mu\text{Sv/h}$ –9999 Sv/h; 0 cpm–999 kcpm; or 0 cps–100 kcps

**ALERT/ALARM:** indicated by ALERT or ALARM annunciation on display (ratemeter mode only) and an audible tone

**RS-232 PORT:** allows two different detector parameters to be programmed by computer (or may be set up manually) to non-volatile memory using the internal, removable switch board

**ADJUSTABLE PARAMETERS:** backlight "On" time, minimum display, RS-232 dump mode, detector setup mode, baud rate, dead time compensation, calibration constant, display units (R/hr, Sv/h, cpm, cps), display range, time base, audio divide, response time, ratemeter alert/alarm, scaler alarm, scaler count time (1 to 9999 seconds)

**LINEARITY:** reading within 10% of true value

**DETECTOR CONNECTOR:** series "C" (others available)

**POWER:** 2 ea. "D" cell batteries (housed in sealed compartment that is externally accessible)

**BATTERY LIFE:** typically 200 hours with alkaline batteries (low battery condition on LCD)

**TEMPERATURE RANGE:** -20 to 50 °C (-4 to 122 °F)

**SIZE:** 16.5 x 8.9 x 21.6 cm (6.5 x 3.5 x 8.5 in.) (H x W x L)

**WEIGHT:** 1.6 kg (3.5 lb) including batteries

#### Model 44-9 Alpha/Beta/Gamma Detector

**DETECTOR:** pancake-type, halogen-quenched GM

**WINDOW:** 1.7 + 0.3 mg/cm<sup>2</sup> mica, 15 cm<sup>2</sup> (2.3 in<sup>2</sup>) active, 12 cm<sup>2</sup> (1.9 in<sup>2</sup>) open

**EFFICIENCY (4 $\pi$ ):** 5% for <sup>14</sup>C; 22% for <sup>90</sup>Sr/<sup>90</sup>Y; 19% for <sup>99</sup>Tc; < 1% for <sup>99m</sup>Tc, 32% <sup>32</sup>P; 1% for <sup>239</sup>Pu

**SENSITIVITY (<sup>137</sup>Cs gamma):** 3300 cpm/mR/hr

**ENERGY RESPONSE:** energy dependent

**BACKGROUND:** 60 cpm

**DEAD TIME:** 80 microseconds

**OPERATING VOLTAGE:** 900 Vdc

**CONNECTOR:** series "C"

**SIZE:** 4.6 x 6.9 x 27.2 cm (1.8 x 2.7 x 10.7 in.) (H x W x L)

**WEIGHT:** 0.5 kg (1 lb)

#### Model 44-2 Gamma Detector

**DETECTOR TYPE:** scintillator, 2.5 x 2.5 cm (1 x 1 in.) (Dia x L) thick NaI(Tl)

**SENSITIVITY:** typically 175 cpm/ $\mu\text{R/hr}$  (<sup>137</sup>Cs gamma)

**BACKGROUND:** 1900 cpm

**RECOMMENDED ENERGY RANGE:** 50 KeV-1.5 MeV

**ENERGY RESPONSE:** energy dependent

**PHOTOMULTIPLIER TUBE:** 2.86 cm (1.12 in.) diameter

**OPERATING VOLTAGE:** 500-1200 volts

**CONNECTOR:** series "C"

**TEMPERATURE RANGE:** -15 to 50 °C (5 to 122 °F)

**SIZE:** 5.1 x 18.5 cm (2 x 7.3 in.) (Dia x L)

**WEIGHT:** 0.5 kg (1 lb)