

# Model 14C-RK Emergency Response Kit



Ludlum Measurements, Inc.

## Features

- Ready-to-Go Kit Packaged in Rugged Case
- Analog Ratemeter with Internal GM
- Multiple External Detectors
- Measures Alpha, Beta, & Gamma Contamination
- Includes a High-Sensitivity Gamma Probe for Quickly Locating Sources of Radiation



Part Number: 48-2653

## Introduction

The 14C-RK Response Kit enables a rapid response to a radiological emergency by packaging the basic radiation measurement tools you're likely to need into one convenient case. The kit includes Ludlum's versatile 5-decade Model 14C Ratemeter, a Model 44-9 pancake-type detector, and a Model 44-2 scintillator detector, with cable, check source, and check source holder. The analog ratemeter with built-in energy compensated GM detector performs exposure rate measurements up to 2000 mR/hr.

Responders may also attach either the Model 44-9 external alpha beta gamma GM pancake probe for contamination measurements, or the Model 44-2 high-sensitivity gamma scintillator to locate the source of high readings using the included 1-meter (39 in.) cable. The carrying case supplied with the kit is air- and watertight with foam pad cutouts for each device. A  $^{137}\text{Cs}$  check source and source holder are also included to verify proper operation of the equipment.

### Model 14C Survey Meter

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

**METER:** 6.4 cm (2.5 in.) arc, 1 mA analog type

**DIAL:** 0-2 mR/hr, 0-6.6 kcpm, BAT TEST (others available)

#### FRONT PANEL CONTROLS:

**MULTIPLIERS:** x0.1, x1, x10, x100, x1000

**AUDIO:** built-in unimorph speaker ON/OFF switch (greater than 60 dB at 0.61 m [2 ft])

**RESPONSE:** toggle switch for FAST (4 seconds) or SLOW (22 seconds) from 10% to 90% of final reading

**RESET:** pushbutton to zero the meter

**BATTERY CHECK:** pushbutton to display battery status on meter face

**CALIBRATION CONTROLS:** accessible from front, (protective cover provided)

**INTERNAL DETECTOR:** energy compensated GM (used with x1000 scale only)

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

**ENERGY RESPONSE:** within 15% of true value between 60 keV and 3MeV (internal GM detector only)

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

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

**BATTERY LIFE:** typically greater than 2000 hours with alkaline batteries (battery condition may be checked on meter face)

**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) with, 1.2 kg (2.6 lb) without 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  $^{14}\text{C}$ ; 22% for  $^{90}\text{Sr}/^{90}\text{Y}$ ; 19% for  $^{99}\text{Tc}$ ; < 1% for  $^{99\text{m}}\text{Tc}$ , 32%  $^{32}\text{P}$ ; 1% for  $^{239}\text{Pu}$

**SENSITIVITY ( $^{137}\text{Cs}$  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/ $\mu\text{R/hr}$  ( $^{137}\text{Cs}$  gamma)

**BACKGROUND:** 1900 cpm

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

**ENERGY RESPONSE:** energy dependent

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

**OPERATING VOLTAGE:** 500-1200 volts

**CONNECTOR:** series "C"

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

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



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

Web: <http://www.ludlums.com> Tel: 800-622-0828 / 325-235-5494 / Fax: 325-235-4672 / Email: [ludlum@ludlums.com](mailto:ludlum@ludlums.com)

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

April 2019