

Model 2241-3RK

Emergency Response Kit



Ludlum Measurements, Inc.

Features

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



Part Number: 48-3189

Introduction

The 2241-3RK Emergency Response Kit promotes a rapid response to a radiological emergency by packaging all of the basic radiation measurement tools you're likely to need into a rugged storage and transport case. This kit will easily meet the radiation requirements of an emergency response plan. It includes a digital, auto-ranging ratemeter/scaler that stores 4 parameter setups for quick changes of detectors in the field. The 1 μCi ^{137}Cs check source with mountable holder ensures instruments are functioning properly. Response Kit components are securely stored and easily transported in the padlockable, air- and watertight corrosion-proof case. Foam padding with custom cutouts for the instruments is included.

Model 2241-3 Survey Meter

SUGGESTED DETECTORS: GM, proportional, scintillation

METER: microprocessor-based digital ratemeter and scaler

DISPLAY: 4-digit (6 in scaler mode) LCD with 1.3 cm (0.5 in.) high digits, moving decimal point, separate annunciators for display units, alert, alarm, low battery, 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

FRONT PANEL: Audio On/Off, Fast/Slow, Sca/Rate, Backlight, Reset, HV, Detector Selector (Det1, Det2, Det3, Det4), On/Off

OFF/DET1/DET2/DET3/DET4: 5-position switch rotary switch selects one of four sets of detector parameters and applies power

SCA/RATE MODE: locking switch toggles between ratemeter and scaler counting modes.

AUD ON/OFF: silences or enables click-per-event audio (audible alarm is independent function and will override the switch)

F/S (FAST/SLOW) RESPONSE: selects desired response time

VARIABLE/FIXED RESPONSE: selects desired time constant

CALIBRATION CONTROLS: under protective cover on front

LINEARITY: reading within 10% of true value

RS-232 PORT: allows user to set up to four different detector parameters using computer, and enables data dump

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

BATTERY LIFE: typically 200 hours with alkaline batteries (low battery warning 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) with batteries

Model 133-7 Gamma Detector

DETECTOR: energy-compensated GM, 30 mg/cm² stainless steel (halogen quench)

LINEAR RANGE W/O DTC: 250 $\mu\text{Sv/h}$ –300 mSv/h (25 mR/hr–30 R/hr)

LINEAR RANGE W/DTC: 250 $\mu\text{Sv/h}$ –1 Sv/h (25 mR/hr–100 R/hr)

SENSITIVITY: 42 cpm/ $\mu\text{Sv/h}$ (4.2 cpm/mR/hr) (^{137}Cs gamma)

BACKGROUND: 1 cpm or less

ENERGY RESPONSE: within 15% of true value (60 keV–3 MeV)

DEAD TIME: typically 50 microseconds

SIZE: 2.3 x 10.2 cm (0.9 x 4.0 in.) (Dia x L)

WEIGHT: 0.090 kg (0.20 lb)

Model 44-9 Alpha/Beta/Gamma Detector

INDICATED USE: alpha, beta, gamma survey; sample counting

DETECTOR: pancake-type, halogen-quenched GM

WINDOW: 1.7 + 0.3 mg/cm² mica, 15 cm² (2.3 in²) active, 12 cm² (1.9 in²) open

EFFICIENCY (4 π): 5% for ^{14}C ; 22% for $^{90}\text{Sr}/^{90}\text{Y}$; 19% for ^{99}Tc ; < 1% for $^{99\text{m}}\text{Tc}$, 32%– ^{32}P ; 1% for ^{239}Pu

SENSITIVITY (^{137}Cs gamma): 3300 cpm/mR/hr

ENERGY RESPONSE: energy dependent

BACKGROUND: 60 cpm

DEAD TIME: 80 microseconds

OPERATING VOLTAGE: 900 Vdc

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: scintillator, 2.5 x 2.5 cm (1 x 1 in.) (Dia x L) NaI(Tl)

SENSITIVITY: typically 175 cpm/ $\mu\text{R/hr}$ (^{137}Cs gamma)

BACKGROUND: 1900 cpm

RECOMMENDED ENERGY RANGE: 50 KeV to 1.5 MeV

ENERGY RESPONSE: energy dependent

PHOTOMULTIPLIER TUBE: 2.86 cm (1.12 in.) diameter

OPERATING VOLTAGE: 500 to 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)