

Model 14C-MERK

Medical Environment Emergency Response Kit



Ludlum Measurements, Inc.

Features

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



Part Number: 48-3722

Introduction

The 14C-MERK Emergency Kit is an ideal tool for any emergency or nuclear medicine department. This kit will easily meet the radiation requirements of an emergency response plan. It offers a detector complement optimized for medical isotopes, and includes a wearable radiation monitor (Model 25) for emergency personnel entering a potentially harmful radiation environment, plus a 1 μCi ^{137}Cs check source with mountable holder. Response kit components are ready-to-go and are easily transportable in the rugged, padlockable, airtight and watertight, corrosion-proof case that also provides secure storage for 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 25 Personal Radiation Monitor

DETECTOR: internal energy-compensated GM

GAMMA RESPONSE: typically 18 cpm per mR/hr (1800 cpm per mSv/h)

ALARMS: dose rate alert, dose rate, accumulated dose alert, accumulated dose (hi), time remaining to allowed dose (hi), detector failure alert, low-battery notice when only 8 hours remain

POWER: 2 ea. lithium coin cell batteries, typically 6000 life

CONSTRUCTION: injection-molded plastic housing, completely gasketed for water resistance, supplied with rubber boot with built-in belt feed-through

SIZE: 7.6 x 5.4 x 1.7 cm (3.0 x 2.1 x 0.69 in.) (H x W x D)

Model 44-9 Alpha/Beta/Gamma Detector

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

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)

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}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)

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

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