Model 3001-MERK
Medical Environment Response Kit

Features

- Ready-to-Go Response Kit
- Ergonomic Survey Meter with 4 Selectable and Configurable Detector Settings
- Measures Alpha, Beta, and Gamma Contamination
- Convenient In-Field Detector Switching

Part Number: 48-4184

The Model 3001-MERK includes:

- Model 3001 Multi-Detector Digital Survey Meter
- Model 44-9, Alpha/Beta/Gamma Detector
- Model 44-2, Gamma Scintillator Detector
- Model 44-142, Beta Scintillator Detector
- Model 25 or Model 25-1 Personal Radiation Monitor
- 1 µCi (^{137}Cs) check source
- 1 m (39 in.) long detector cable
- Carrying case

Ludlum offers several versions of pre-packaged response kits suitable for a wide variety of applications. If you desire more or different detectors, or other changes to our standard kits, please contact us regarding a customized kit.

Model 3001 Multi-Detector Survey Meter

ALARMS: count rate, exposure/dose, and scaler alarm setpoints adjustable over the display range

OVERLOAD: high count rate saturation protection prevents false display of lower count rates

LOSS OF COUNT ALARM: after preselected time interval (default 60 seconds) of no pulses from detector, audible and visual alarms will be activated

LCD DISPLAY: 3 digit LCD with 20 mm (0.8 in.) digits, (k)cps, (k)cpm, (k)Bq, (k)dpm, (µ)(m)R(/h), (µ)(m)Sv(/h), low-battery indicator, MAX, ALARM, AUDIO

DISPLAY RANGE: 0.0 cps to 99.9 kcps; 0.00 cpm to 999 kcpm; 0.00 Bq to 99.9 kBq; 0.00 dpm to 999 kdpm; 0.00 µR/h to 999 R/h; 0.00 µSv/h to 999 Sv/h. Max display can be set to limit display to calibrated range

USER CONTROLS:

• ON/ACK - press to turn ON, tap to acknowledge alarms and silence alarm tone, press to reset Sigma Audio alarm, hold for OFF

• MODE - select NORMAL (count rate), MAX (captures peak rate), and COUNT (user-selectable preset count time from 0 to 10 minutes)

• DETECTOR: selects active detector

• UNITS - changes the units between count rate (cpm, cps), dose/exposure (µSv/h, mR/h), or disintegration (dpm, Bq)

RESPONSE TIME: selectable from 1 to 60 seconds, or Auto-Response Rate FAST or SLOW

AUDIO: greater than 75 dB at 0.6 m (2 ft),

POWER: four alkaline or four rechargeable "AA" batteries (no in-device charging); BATTERY LIFE: 500 hours (as low as 100 hours with backlight configured for continuous-on), 16-hour low battery warning

ENVIRONMENTAL RATING: NEMA (National Electrical Manufactures Association) rating of 4x or IP (Ingress Protection) rating of 65

PHYSICAL: 16.5 x 11.4 x 21.6 cm (6.5 x 4.5 x 8.5 in.); 0.9 kg (2.0 lb)

Model 44-142 Beta Detector

DETECTOR: beta scintillator

EFFICIENCY (4π): typically 20% for ^{99}Tc; 30% for ^{90}SrY; 4% for ^{14}C

RESPONSE UNIFORMITY: ≤10% from average reading for ^{99}Tc

DEAD TIME: typically 5 microseconds or less

SCREEN: snap-on, 0.030 in. thick stainless steel with 0.25 in. square holes, 88% open

CONSTRUCTION: aluminum housing with beige powder coat

SIZE: 76.4 x 9.5 x 31.1 cm (2.5 x 3.8 x 12.3 in.) (H x W x D)

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/cm^2 mica, 15 cm^2 (2.3 in^2) active, 12 cm^2 (1.9 in^2) open

EFFICIENCY (4π): 5% for ^{14}C; 22% for ^{90}Sr/^{90}Y; 19% for ^{99}Tc; < 1% for ^{99m}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)

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/µR/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)

Included Items

Personal Ratemeter, 1 µCi (^{137}Cs) Check Source, Carrying Case, Cable, Batteries

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