



## 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

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  $\mu\text{Ci}$  ( $^{137}\text{Cs}$ ) 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.



Part Number: 48-4184

#### Model 3001 Multi-Detector Survey Meter

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

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

**LOSS OF COUNT PROTECTION:** 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, ( $\mu$ )(m)R/h, ( $\mu$ )(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  $\mu\text{R/h}$  to 999 R/h; 0.00  $\mu\text{Sv/h}$  to 999 Sv/h. Max display can be set to limit display to calibrated range

**USER CONTROLS:**

- ON/ACK: extra-long press to turn ON, short press to adjust audio level and acknowledge alarms; long press to reset mode, extra-long press plus 3 seconds to turn OFF
- MODE: short press alternates between modes: RATE (displays count rate), MAX (captures peak rate), and COUNT (captures rate or dose readings for a user-selectable preset count time from 0 to 10 minutes)
- DETECTOR: short presses to change between available detector
- UNITS: short press changes the units between count rate, dose/exposure, or disintegration, an extra-long press to change count time in COUNT mode
- LOG: short press to log current display (requires Lumic Data Logger Kit), or initiate count in COUNT mode

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

**AUDIO:** approximately 4.5 kHz, click audio greater than 65 dB at 0.6 m (2 ft), alarm audio greater than 72 dB

**POWER:** four alkaline "AA" batteries

**BATTERY LIFE:** 500 hours (as low as 60 hours with backlight configured for continuous-on), 16-hour low battery warning

**ENVIRONMENTAL RATING:** NEMA (National Electrical Manufacturers Association) rating of 5x or IP (Ingress Protection) rating of 53

**PHYSICAL:** 16.5 x 11.4 x 21.6 cm (6.5 x 4.5 x 8.5 in.); 0.7kg (1.6 lb)

#### Model 44-142 Beta Detector

**DETECTOR:** beta scintillator

**EFFICIENCY (4 $\pi$ ):** typically 20% for  $^{90}\text{Sr}$ ; 30% for  $^{90}\text{Sr}$ ; 4% for  $^{14}\text{C}$

**RESPONSE UNIFORMITY:**  $\leq 10\%$  from average reading for  $^{99}\text{Tc}$

**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:**  $1.7 \pm 0.3$  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  $^{99m}\text{Tc}$ , 32%-32P; 1% for  $^{239}\text{Pu}$

**SENSITIVITY (137Cs 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/ $\mu\text{R/hr}$  ( $^{137}\text{Cs}$  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  $\mu\text{Ci}$  ( $^{137}\text{Cs}$ ) Check Source, Carrying Case, Cable, Batteries