

Model 3003i-4RK Emergency Response Kit

Part Number: 48-4483

Features

- Ready-to-Go Response Kit in Rugged Case
- Ergonomic Survey Meter with 4 Selectable and Configurable Detector Settings
- Measures Alpha, Beta, and Gamma Contamination
- Alpha, Beta, or Alpha+Beta Measurements
- Convenient In-Field Detector Switching
- Either Internal or External Dose Measurement Detector

Introduction

The Model 3003i-4RK consists of the necessary equipment for measuring radiation in both NORM and emergency response applications. The standard kit includes:

- Model 3003i Multi-Detector Ratemeter
- Model 44-9 Alpha-Beta-Gamma GM Detector
- Model 44-2 High Energy Gamma Scintillation Detector
- Model 133-6 Gamma GM Detector
- Model 43-93 Alpha/Beta Scintillation Detector

Each kit comes in a rugged transport and storage case, which holds the meter and all four detectors, as well as a detector cable and a 1 μCi ^{137}Cs check source.



Model 3003i

Options

Model 133-7 Gamma GM Detector (PN 47-1216)

A higher range option replacing the Model 133-6 detector.

Model	133-6	133-7
Linear Range	40 $\mu\text{Sv/h}$ to 5 Sv/h (4 mR/hr to 500 R/hr)	250 $\mu\text{Sv/h}$ to 10 Sv/h (25 mR/hr to 1000 R/hr)

Bluetooth® Modification (PN 4519-564)

Adds Bluetooth® capability to instrument.

Lumic Calibration Kit (PN 4519-865)

Includes Lumic Calibration Software versions 1.0 & 2.0, a Model 3000 Series USB cable, and a Model 30 family USB cable.

Lumic Data Logging Kit (PN 4498-1019)

Includes Lumic Data Logger Software and Model 3000 Series USB cable.

Model 3003i Multi-Detector Ratemeter

- Four selectable and configurable detector settings
- Internal energy compensated GM detector for dose measurements, Range: Background to 50 mSv/h (5 R/hr)
- Four operational modes: RATE (displays count rate), MAX (captures peak rate), COUNT (preset count time from 0 to 31.68 years), and DOSE (current accumulated dose)

DISPLAY: 3-digit auto-ranging LCD with large 20 mm (0.8 in.) digits, built-in ambient light sensor automatically activates LED backlight

DISPLAY RANGE: 00.0 cps to 999 kcps; 00.0 cpm to 99.9 Mcpm; 00.0 Bq to 999 MBq; 00.0 Bq/cm² to 999 MBq/cm²; 00.0 dpm to 999 Mdpm; 0.00 μR to 999 MR; 0.00 μR/h to 9.99 kR/h; 0.00 μSv to 999 MSv; 0.00 μSv/h to 999 Sv/h; 0.00 μRem to 999 MRem; 0.00 μRem/h to 9.99 kRem/h; 0 c to 999 Mc (counts); 0 d to 999 Md (disintegrations). Minimum and maximum display can be set to limit display to calibrated range.

USER CONTROLS:

- ON/AUD: instrument On/Off, adjust audio level
- UNITS: switch between primary and secondary units
- DETECTOR: press to change between detectors, and between internal and external detector
- MODE: press to select mode - RATE, MAX, COUNT, DOSE
- ACK/RST: acknowledge alarms, reset current mode
- LOG: log current display or initiate count in COUNT mode, extra-long press to change count in COUNT mode
- PRG: press during power-up to access setup menu

DATA LOGGING: Can store up to 1000 data points internally. Requires Lumic Data Logger Kit (see Options)

RESPONSE TIME: User-selectable from 1 to 60 seconds, auto SLOW, auto FAST, fixed SLOW (22s), fixed FAST (4s)

ALARMS: Three count rate, exposure/dose, scaler, and accumulated dose alarm set-points adjustable over the display range

OVERLOAD PROTECTION: High count rate saturation protection prevents false display of lower count rates.

LOSS OF COUNT PROTECTION: After a user-defined time (typically 60 seconds) of no pulses from detector, the unit will indicate loss of count

OVERRANGE: Indicated when reading exceeds the predefined detector range

AUDIO: "Click" audio greater than 65 dB at 0.6 m (2 ft); Alarm audio greater than 72 dB at 0.6 m (2 ft), approx. 4.5 kHz

POWER: Four "AA" batteries, approximately 175 hour battery life, 16-hour low battery warning

CONSTRUCTION: High-impact polycarbonate with rubber seals and separate battery compartment

TEMPERATURE RANGE: -20 to 50 °C (-5 to 122 °F), may be certified for operation from -40 to 65 °C (-40 to 150 °F)

ENVIRONMENTAL RATING: NEMA 3x or IP 53

SIZE: (H X W X L): 16.5 x 11.4 x 21.6 cm (6.5 x 4.5 x 8.5 in.)

WEIGHT: 0.9 kg (2.0 lb)

Model 44-9 Alpha-Beta-Gamma GM Detector

DETECTOR: pancake-type, halogen-quenched GM

EFFICIENCY (4π): ¹⁴C - 5%; ⁹⁰Sr/⁹⁰Y - 22%; ⁹⁹Tc - 19%; ^{99m}Tc - < 1%; ³²P - 32%; ²³⁹Pu - 1%; ¹²⁵I - 0.2%

SENSITIVITY (¹³⁷Cs gamma): 3300 cpm per mR/hr

ENERGY RESPONSE: energy dependent

BACKGROUND: 60 cpm

DEAD TIME: 80 μs

OPERATING VOLTAGE: 900 Vdc

PHYSICAL: 4.6 x 6.9 x 27.2 cm (1.8 x 2.7 x 10.7 in.); 0.5 kg (1 lb)

Model 44-2 High Energy Gamma GM Detector

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

EFFICIENCY: ¹²⁵I - 7%; ⁵⁷Co - 10%; ¹³⁷Cs - 3%; ⁶⁰Co - 3%

SENSITIVITY (¹³⁷Cs gamma): typically 175 cpm per μR/hr

ENERGY RESPONSE: energy dependent

BACKGROUND: 1800 cpm

OPERATING VOLTAGE: 500 to 1200 Vdc

PHYSICAL: 5.1 x 21 cm (2 x 8.25 in.); 0.5 kg (1 lb)

Model 133-6 Gamma GM Detector

DETECTOR: energy-compensated, halogen quenched GM, 30 mg/cm² stainless steel

LINEAR RANGE: 40 μSv/h to 5 Sv/h (4 mR/hr to 500 R/hr)

SENSITIVITY (¹³⁷Cs gamma): 1.8 cpm/μSv/h (18 cpm/mR/hr)

ENERGY RESPONSE: within 25% of true value (60 keV to 3 MeV)

BACKGROUND: 1 cpm or less

DEAD TIME: typically 50 μs

OPERATING VOLTAGE: 550 Vdc

PHYSICAL: 2.2 x 10.2 cm (0.88 x 4 in.); 0.090 kg (0.20 lb)

Model 43-93 Alpha/Beta Scintillation Detector

DETECTOR: ZnS(Ag) scintillator adhered to 0.25 mm (0.01 in.) thick plastic scintillator

ACTIVE WINDOW AREA: 100 cm² (15.5 in²)

EFFICIENCY: ⁹⁹Tc - 15%; ⁹⁰Sr/⁹⁰Y - 20%; ²³⁹Pu - 20%

BACKGROUND: Alpha - 3 cpm or less; Beta - 300 cpm or less

OPERATING VOLTAGE: 500 to 1200 Vdc

PHYSICAL: 6.4 x 9.5 x 31 cm (2.5 x 3.8 x 12.3 in.); 0.5 kg (1.0 lb)