

Model 3019 Digital Background Survey Meter

Features

- Large Backlit LCD for Ease of Reading
- Autoranging - Hands Free
- Sigma Audio and Bright LED Simplifies Searching
- Light Weight and Ruggedly Built
- Splash-Resistant Construction for Outdoor Use
- 4-Button Intuitive Interface for Easy Operation
- All-Digital Calibration; USB Port
- Rate, Max, and Count Modes of Operation
- Shipped Calibrated & Ready-to-Go



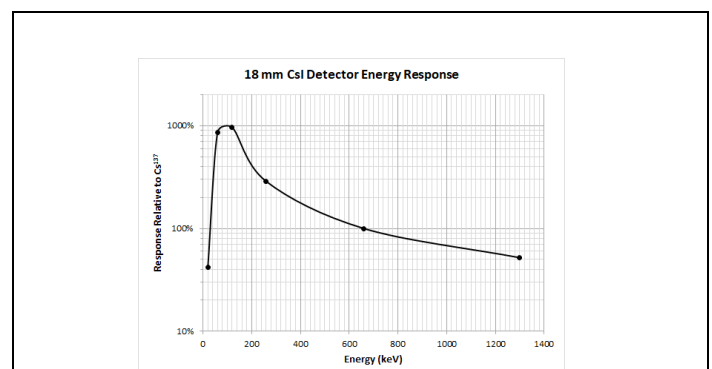
Introduction

The Model 3019 is an ergonomically-designed, low-weight digital background survey meter used for background measurements of gamma radiation levels up to 500 $\mu\text{Sv/hr}$ (50 mR/hr). An internally installed CsI scintillator provides 175 cpm/ $\mu\text{R/hr}$ sensitivity. This instrument's alarm set points can be designated through Setup Mode using the onboard keypad, or alternatively by USB connection via the optional software.

Other features include a large, easily-readable LCD (liquid crystal display), piercing audio warning tone, and easy, intuitive design. Splash-resistant construction matched with a unit body made of durable, high-impact plastic enables this instrument to be used indoors or outdoors. The padded handle is shipped pre-configured for datalogging operations with the built-in logging push button and warning light, making the device ready if the customer chooses to acquire the optional datalog software .

Operators can access setting adjustments, including calibration constant, dead time correction, efficiency, high voltage, high voltage current overload level, pulse threshold, response time (fast or slow), count time, operational modes (Rate, Max, or Count), and minimum and maximum display levels. Primary and Secondary units, unit alarm levels, count units, count alarm levels, and zero pulse protection time limit. Another alarm, the sigma audio feature, assists search efforts by issuing an audible alarm when radiation levels outside set parameters are detected. An internal switch is used to enable or disable the front-panel setup feature to protect desired settings from inadvertent modification.

Note: While the detector used in this instrument is sensitive and is often used for detection of near-background levels of radiation, its nonlinear energy response means that dose and exposure measurements may be over/underreported.



Specifications

Part Number: 48-4091

DETECTOR: Internal CsI scintillator

SENSITIVITY: 175 cpm per $\mu\text{R/hr}$

ENERGY RANGE: Nonlinear (see energy response curve at right)

LINEARITY: Reading within 10% of true value

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

DETECTOR RANGE: Background to 500 $\mu\text{Sv/h}$ (50 mR/hr)

BACKLIGHT: Built-in ambient light sensor automatically activates low-power LED backlight, unless internal dipswitch is set to continuous-on (will reduce battery life)

USER CONTROLS:

ON/OFF - Press to turn ON; Tap to acknowledge alarms and silence alarm tone; Hold for OFF

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

AUDIO - Turn "click" audio On/Off

UNITS - Changes the units between count rate (cpm, cps), or dose/exposure ($\mu\text{Sv/h}$, mR/h)

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

ALARMS: Alarm set-points adjustable over the display range

SIGMA AUDIO MODE: Alarm that allows user to find small increases above the background radiation level. The instrument will beep whenever it measures a rate that exceeds a threshold rate above the measured background rate.

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

ZERO PROTECTION: After a user-settable time interval (default 60 seconds) of no pulses from the detector, unit will flash a zero reading and the alarm audio will be triggered

DEAD TIME CORRECTION: Employs first and second order corrections for extended performance

HV RANGE: 400 to 1500 Vdc

AUDIO: Greater than 75 dB at 0.6 m (2 ft), approximately 4.5 kHz

POWER: Four alkaline or four rechargeable "AA" batteries (instrument does not support in-device charging)

BATTERY LIFE: Approximately 750 hours of operation (as low as 100 hours with backlight continuous-on), 16-hour low battery warning

CONSTRUCTION: High-impact plastic with water-resistant 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 rating of 4x or IP rating of 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:** 1.06 kg (2.3 lb)