

Model 3019 Digital Background Survey Meter

Features

- Very Sensitive Internal CsI Detector
- Large, Backlit, Easy-To-Read LCD Screen
- Auto-Ranging
- RATE, MAX, and COUNT Modes
- Sigma Audio Mode
- Splash-Resistant Construction for Outdoor Use
- All Digital Calibration
- Lightweight Yet Rugged
- Simple 5-Button Interface



Introduction

The Model 3019 is a portable and versatile instrument with an internal detector used for background measurements of gamma radiation levels up to 500 $\mu\text{Sv/h}$ (50 mR/hr). The internal CsI scintillation detector has a sensitivity of 175 cpm per $\mu\text{R/hr}$. It features a large, easy-to-read LCD screen and audible alarms and is controlled using a simple five-button interface. The meter body is made of high-impact plastic and splash-resistant construction allows the instrument to be used outdoors.

Three modes of operation are available – RATE, MAX, and COUNT – which can be selected by pressing the MODE button. Measurements can be collected in two sets of units (primary and secondary) for RATE and MAX modes in cps, cpm, mR/h, or $\mu\text{Sv/h}$ units. The user can switch between the two sets of units by pressing the UNITS button. A sigma audio mode can be enabled that allows the user to find small increases above the background radiation level. When enabled with the optional Lumatic Data Logger Kit (PN: 4498-1019), data can be logged in any of the operational modes using the LOG button on the handle. Up to 1000 data points can be stored internally.

Instrument setup can be done either through the front-panel controls or via the Lumatic Calibration Kit (PN: 4519-865). The Model 3019 is shipped ready to use with batteries and a calibration certificate.

Note: While the detector used in this instrument is sensitive and is often used for detection of near-background levels of radiation, its non-linear energy response means that dose and exposure measurements may be over/under reported. (See graph on next page.)

Specifications

Part Number: 48-4091

DETECTOR: Internal CsI scintillator

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

ENERGY RANGE: Nonlinear (see energy response curve below)

LINEARITY: Reading within 10% of true value

DISPLAY: 3-digit auto-ranging LCD with large 20 mm (0.8 in.) digits. Units: (k)cps, (k)cpm, (μ)(m)R/h, (μ)(m)Sv/h).
Indicators: bar graph, MAX, ALARM, USB, audio, low-battery.

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: Extra-long press to turn ON; Short press to acknowledge alarms; Extra-long press plus 3 seconds to turn OFF
- UNITS: Short press changes the units between count rate, dose/exposure, disintegration, an extra-long press to change count time in COUNT mode
- AUDIO: Short press to adjust audio level
- 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)
- LOG: Short press to log current display (requires Lumic Data Logger Kit) or initiate count in COUNT mode

DATA LOGGING: Can store up to 1000 data points internally. Requires Lumic Data Logger Kit (PN: 4498-1019)

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

ALARMS: Two adjustable count rate, exposure/dose, and count 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 PROTECTION: High count rate saturation protection prevents false display of lower count rates. "OL" will appear on the display and an audio warning will be triggered

LOSS OF COUNT 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

OVERRANGE: If the reading should exceed the predefined detector range, the instrument will flash a maximum reading and trigger an audio warning

HV RANGE: 400 to 1500 Vdc

THRESHOLD: -20 to -100 mVdc

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: 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 5 or IP rating of 53

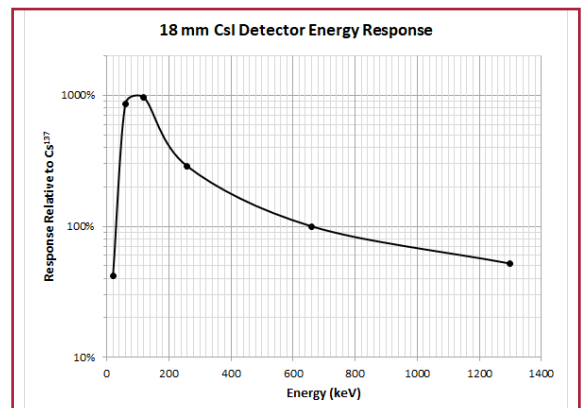
SIZE (H x W x L): 16.5 x 11.4 x 21.6 cm (6.5 x 4.5 x 8.5 in.)

WEIGHT: 1.06 kg (2.3 lb)

Options:

Lumic Calibration Kit (PN 4519-865): Includes software and required cable. Lumic Calibration Software allows reading and writing of important instrument parameters via a USB port.

Lumic Data Logger Kit (PN 4498-1019): Includes software and required cable. Lumic Data Logger Software is required to use instrument data logging features.



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