

LUDLUM MEASUREMENTS, INC.

Model 3002 Alpha-Beta Survey Meter

Features

- Large Backlit LCD for Ease of Reading
- Autoranging, Dual Tone Audio Clicks
- All-Digital Calibration
- Rate, Max, and Count Modes of Operation
- Alpha, Beta, or Alpha + Beta Measurements
- 4-Button Intuitive Interface for Easy Operation
- Splash-Resistant Construction for Outdoor Use



Introduction The Model 3002 is a durable, lightweight instrument designed for alpha and beta radiation survey with an external detector. It features a large, easy-to-read LCD screen and audible alarms and is controlled using a simple five-button interface. The unit 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 cps, cpm, Bq, or dpm units. Pressing the α - β button switches between alpha, beta, or alpha + beta measurements. When enabled with the optional Lumic 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 Lumic Calibration Kit (PN: 4519- 865). The Model 3002 is shipped ready to use with batteries and a calibration certificate.

Specifications

Part Number 48-4037

COMPATIBLE DETECTORS: alpha-beta scintillation or gas proportional

DISPLAY: 3-digit auto-ranging LCD with large 20 mm (0.8 in.) digits. Units: (k)cps, (k)cpm, (k)Bq, (k)dpm.

Indicators: bar graph, radiation type (alpha (α), beta (β)), MAX, ALARM, USB, audio, low battery.

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

NOTE: Operational display ranges are dependent on the detector and dead time configuration. The minimum and maximum display can be set to limit the display to the calibrated range.

LINEARITY: within 10% of true value

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
- α - β : short press changes between alpha, beta, and alpha + beta measurements
- AUDIO: short press to adjust audio level, long press in COUNT mode allows for selection of alternate count times
- MODE: short press alternates between modes: RATE (display 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 setpoints adjustable over the display range

OVERLOAD PROTECTION: high count rate saturation protection prevents false display of lower count rates. "OL" will appear on 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 detector, unit will flash a zero reading and the alarm audio will be triggered

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

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

HIGH VOLTAGE: 400 to 2200 Vdc

THRESHOLD: Alpha: -2 to -500 mVdc, Beta: -2 to -99.9 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 configured for 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: 0.7 kg (1.6 lb) (excluding detector and clip)

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.