LUDLUM MEASUREMENTS, INC.

Model 3276
Multipurpose Digital Meter

Part Number: 48-4160

Features

- Uses Either an Internal or External Detector to Measure Alpha, Beta, or Gamma Radiation
- Versatile — Can Operate as an Area Monitor or a Frisker
- Simple Setup and Use
- User-Adjustable Alarms
- User-Programmable Units of Measurement, Either U.S. or SI Units
- Power: Standard Alkaline (4) "AA" Batteries or 9 VDC Wall Mount Transformer

Model 3276 with desktop stand option

Introduction

The Model 3276 is a versatile instrument that can be used for multiple radiation detection or measurement purposes. It is used with either an internal or an external radiation detector to detect alpha, beta, or gamma radiation in applications such as frisking or area monitoring.

It features a large, backlit, easy-to-read LCD screen and audible alarms and is controlled using a simple four-button interface. The unit body is made of lightweight, rugged aluminum. It is not intended for outdoor use and should be protected from splashing water. The attached metal handle facilitates transportation between sites. The instrument can be wall-mounted for area monitoring applications or mounted to a stand for desktop applications such as frisking (see options).

The Model 3276 can measure radiation in count rate, exposure rate, exposure rate/dose, activity rate, integrated exposure/dose, time-averaged rates, and scaler counts. When used as a frisker, three modes of operation are available – RATE, MAX, and COUNT – which can be selected by pressing the MODE button. When used as an area monitor, only RATE mode is available by default. Measurements can be collected in two sets of units (primary and secondary) for RATE and MAX modes in cps, cpm, Bq, dpm, R/hr, or Sv/h units. The user can switch between the two sets of units by pressing the UNITS button. When used as a frisker with a scintillation detector, a sigma audio mode can be enabled that allows the user to find small increases above the background radiation level.

Instrument setup can be done either through the front-panel controls or via the Lumic Calibration Kit (PN: 4519-865). Power is supplied by either four alkaline "AA" batteries or a 9 Vdc wall mount transformer. The Model 3276 is shipped ready to use with batteries, a wall transformer, and a calibration certificate.

Area Monitor Configurations
(internal detectors)

Model	Detector	Operating Range	Part #
3276/1*	CsI scintillator 18 x 18 mm	0.01 µSv/h - 500 µSv/h (1 µR/hr - 50 mR/hr) Sensitivity: 100 cpm/µR/hr	48-4169
3276/2	energy compensated GM	1.0 µSv/h - 50 mSv/h (0.10 mR/hr - 5.00 R/hr)	48-4170
3276/4	energy compensated GM	10 µSv/h - 500 mSv/h (1 mR/hr - 50 R/hr)	48-4171
3276/6	energy compensated GM	40 µSv/h - 10 Sv/h (4 mR/hr - 999 R/hr)	48-4283

***3276/1 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/under-reported. See energy response curve on back.

Ludlum Measurements, Inc. P.O. Box 810, Sweetwater, Texas 79556
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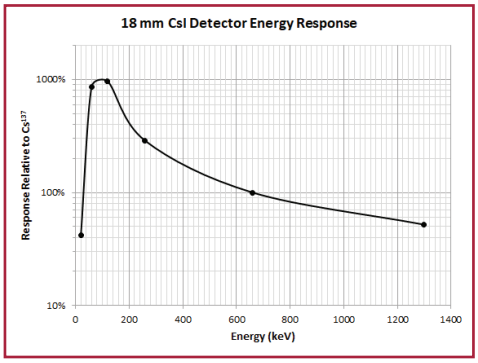
Note: specifications subject to change without notification. We are not responsible for errors or omissions.

Specifications

Model 3276/1 Detector Energy Response Curve



COMPATIBLE DETECTORS: GM, scintillation, or proportional

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

DISPLAY RANGE:

- 0.00 cps to 999 kcps
- 0.00 cpm to 999 kcpm
- 0.00 Bq to 999 kBq
- 0.00 dpm to 999 kdpm
- 0.00 µR/h to 999 R/h
- 0.00 µSv/h to 999 Sv/h

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: readings within 10% of true value **BACKLIGHT:** Continuously on to provide better visibility

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 from count rate, dose/exposure, or 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

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

ALARMS: Two count rate, exposure/dose, and scaler 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 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 detector, the 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

HIGH VOLTAGE: 550 Vdc **THRESHOLD:** -4 to -100 mV

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 for portable use, or 9 Vdc input via wall mount transformer (input 100 - 250 Vac, 50 - 60 Hz)

BATTERY LIFE: Approximately 50 hours with backlight ON, 16-hour low-battery warning

CONSTRUCTION: Aluminum housing with powder coat finish and subsurface printed front panel

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 2 or IP rating of 51

PHYSICAL: (H x W x L) 5.8 x 13.5 x 19.1 cm (2.3 x 5.3 x 7.5 in.); 0.9 kg (2 lb) (excluding detectors and clips)

Options

See our website for more information and additional options.

- **Lumic Calibration Software Kit (includes cable):** PN 4519-865
- **Ludlum Universal Software:** PN 1370-093
- **Strobe & Horn:** PN 4498-1016
- **Ethernet Option:** PN 4498-958 **RS-232 Option:** PN 4498-873
- **Desktop Stand:** PN 4498-784 (pictured on front)
- **Wall Mount with Detector Cradle for Model 44-9:** PN 4498-869
- **Wall Mount with Detector Cradle with Switch for Model 44-9:** PN 4498-859-02

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