

## Model 3276 Multipurpose Digital Meter

### 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: 4498-1018). 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	0.01 $\mu$ Sv/h - 500 $\mu$ Sv/h (1 $\mu$ R/hr - 50 mR/hr)	48-4169
3276/2	energy compensated GM	1.0 $\mu$ Sv/h - 50 mSv/h (0.10 mR/hr - 5.00 R/hr)	48-4170
3276/4	energy compensated GM	10 $\mu$ Sv/h - 500 mSv/h (1 mR/hr - 50 R/hr)	48-4171
3276/6	energy compensated GM	40 $\mu$ Sv/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.

## Specifications

Part Number: 48-4160

**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, ( $\mu$ )(m)R(/h), ( $\mu$ )(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  $\mu$ R/h to 999 R/h
- 0.00  $\mu$ Sv/h to 999 Sv/h

NOTE: Display Ranges should be set up by qualified personnel according to detector specifications

**LINEARITY:** within 10%

**BACKLIGHT:** Continuously on to provide better visibility

### USER CONTROLS:

- ON/OFF: Press to turn ON; Tap to acknowledge alarms and silence alarm tone; Press to reset Sigma Audio alarm; Press to reset or start scaler count; Hold for OFF
- UNITS: Changes the units from count rate (cpm, cps), to dose/exposure ( $\mu$ Sv/h, mR/hr), or disintegration (dpm, Bq)
- AUDIO: Turn "click" audio HI/LO/off; Turn Sigma Audio beep on/off
- MODE: Alternates between RATE (count rate), MAX (captures peak rate), and COUNT (user-selectable preset count time from 0 to 10 minutes). Number of modes can be reduced in setup.

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

**ALARMS:** 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

**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

**HIGH VOLTAGE:** 400 to 1500 Vdc

**THRESHOLD:** -4 to -100 mV

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

**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, 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

**SIZE (H x W x L):** 5.8 x 13.5 x 19.1 cm (2.3 x 5.3 x 7.5 in.)

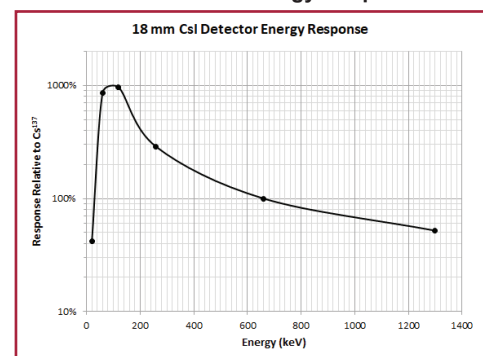
**WEIGHT:** 0.72 kg (1.6 lb)

## Options

See our website for more information and additional options.

- **Lumic Calibration Software Kit (includes cable):** PN 4498-1018
- **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

Model 3276/1 Detector Energy Response Curve



Ludlum Measurements, Inc. P.O. Box 810, Sweetwater, Texas 79556

Web: <http://www.ludlums.com> Tel: 800-622-0828 / 325-235-5494 / Fax: 325-235-4672 / Email: [sales@ludlums.com](mailto:sales@ludlums.com)

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