

Model 3 General Purpose Ratemeter

FEATURES

- Supports GM & Scintillation Detectors
- Rugged Construction & Low Price
- 4-Range Analog Ratemeter
- Greater than 2000 Hour Battery Life
- Audio On-Off, BAT CHECK
- Options & Accessories for Multiple Applications

Introduction

This is Ludlum's best selling, general purpose, handheld analog ratemeter known for accuracy and long-lasting dependability. The analog meter comes in a variety of measurement ranges and units to support the external radiation detector selected.

The cast aluminum instrument housing with its separate battery compartment and accompanying metal handle offer an industrial robustness and quality that promote long-lasting protection and instrument life. The front-panel controls include a rotary switch for selecting the four-decade range, instrument shut-off, and battery test, an audio on/off switch, a fast/slow response switch, and a count reset button.

A one meter (39 in.) straight type detector cable with "C" style connector is included in the price of the instrument.

Specifications

Part Number: 48-1605

COMPATIBLE DETECTORS: GM and scintillation

HIGH VOLTAGE: adjustable from 400 to 1500 Vdc

THRESHOLD: -30 mV \pm 10 mV

LINEARITY: within 10% of true value

CONTROLS:

- Rotary Selector Switch: off, battery check, range selections for x0.1, x1, x10, x100
- Reset: pushbutton to zero meter
- Response: toggle between FAST (4 secs) or SLOW (22 secs) from 10% to 90% of final reading
- Audio Switch: on/off, built-in unimorph speaker, 60 dB at 61 cm (2 ft)
- Calibration Controls: accessible from front of instrument (protective cover provided)

CONSTRUCTION: cast and drawn aluminum with beige powder coating

METER DIAL: 0-2 mR/hr, or 0-500 kcpm, BAT TEST (others available)

DETECTOR CONNECTOR: type "C" series (others available)

TEMPERATURE RANGE: -20 to 50 °C (-4 to 122 °F)

May be certified for operation from -40 to 65 °C (-40 to 150 °F)

POWER: two each "D" cell batteries (housed in externally accessible sealed compartment)

BATTERY LIFE: typically greater than 2000 hours with alkaline batteries (battery condition can be checked on meter)

SIZE: 16.5 x 8.9 x 21.6 cm (6.5 x 3.5 x 8.5 in.) (H x W x L)

WEIGHT: 1.6 kg (3.5 lb), including batteries

Also Available:

Model 3A: Identical to Model 3, but with built-in audible and visual alarms (Part No. 48-1408)

Model 3-IS: Intrinsic safety rating for operating in hazardous areas (Part No. 48-3581)

Model 14C: Includes internal GM detector with range of 0-20 mSv/h (0-2000 mR/hr) (Part No. 48-1611)

Model 3000-Series of digital, low-weight, versatile instruments. See website for further details.



Model 3 face view

Model 14C

General Purpose Ratemeter



Ludlum Measurements, Inc.

Features

- Low Price
- Rugged
- 5-Range Analog Ratemeter
- Operates Two Detectors
 - Built-in Internal GM Detector
 - External GM or Scintillator Detector



Introduction

The Model 14C general purpose, handheld analog ratemeter supports operating two separate radiation detectors. This instrument is set for 900-volt GM tube operation and is typically used with an external, thin-wall GM tube or pancake GM. Other external detectors are compatible with the Model 14C, however. An internal energy-compensated, high-range detector is used for the x1000 range only. This detector is active whenever the instrument is on and in a very high radiation field, and it will drive the meter needle to full scale, thus alerting the user. A switch allows the operator to select between the internally mounted GM detector with an exposure range of 0 to 20 mSv/h (0 to 2000 mR/hr) or an external GM or scintillator detector of choice.

Specifications

Part Number: 48-1611

APPLICATION: alpha, beta, gamma survey

COMPATIBLE DETECTORS: GM, scintillation

DETECTOR CHANNELS: x0.1 through x100 range settings read out the external detector channel, x1000 reads out the internal GM detector

EXTERNAL DETECTOR: any GM or scintillator operating on 900 Vdc

INTERNAL DETECTOR: energy compensated GM, 0-20 mSv/h (0-2000 mR/hr), used with x1000 scale only

ENERGY RESPONSE: within 15% of true value between 60 keV-3 MeV (internal detector only)

LINEARITY: reading within 10% of true value with detector connected

HIGH VOLTAGE: 900 volts

THRESHOLD: -40 mV \pm 10 mV

CONNECTOR: series "C"

METER: 6.4 cm (2.5 in.) arc, 1 mA analog type

METER DIAL: typically 0-2 mR/hr and cpm, BAT TEST (others available)

CONTROLS:

Rotary Selector Switch: switches instrument to Off or ranges: x0.1, x1, x10, x100, x1000

Response Switch: toggles between FAST (4 seconds) or SLOW (22 seconds) from 10% to 90% of final reading

Reset Pushbutton: to zero meter

Battery Pushbutton: checks battery status

Audio Switch: audio on/off, built-in unimorph speaker, greater than 60 dB at 0.6 meters (2 ft)

POWER: 2 each "D" cell batteries (housed in an externally accessible sealed compartment)

BATTERY LIFE: typically greater than 2000 hrs (battery condition can be checked on meter); LOW BAT warning

CONSTRUCTION: cast and drawn aluminum with beige powder coating

TEMPERATURE RANGE: -20 to 50 °C (-4 to 122 °F)

RELATIVE HUMIDITY: < 95%

SIZE: 16.5 x 8.9 x 21.6 cm (6.5 x 3.5 x 8.5 in.) (H x W x D)

WEIGHT: 1.6 kg (3.5 lb), including batteries

Options (others available)

Check Source: Model L-01-5196

Shoulder Strap: Model L-4363-413

Carry/Store Case: Model L-2310278

Lighted Handle: Model L-4464-154

Portable Scaler Option: L-4464-114

Headphone Modification: Model L-4464-464

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.

Jan 2013

Model 44-9 Alpha, Beta, Gamma Radiation Detector



Introduction

The Ludlum Model 44-9 GM (Geiger-Mueller) Detector is a conveniently shaped detector designed for monitoring alpha, beta, and gamma radiation on personnel, objects, and surfaces. It will operate with any Ludlum instrument (or equivalent instrument) that provides 900 Vdc and an input sensitivity of approximately 30 mV or higher. A slip-resistant grip, powder-coated metal housing, and protective stainless steel screen make this a rugged detector that can be used in a wide variety of applications.

Using the Model 44-9 for Dose Measurements

The GM pancake detector used in the Model 44-9 has a significant over-response at lower energies between approximately 20 to 160 keV. Any dose measurements taken with an unfiltered GM pancake detector would thus have unacceptable errors at these lower energies. A snap-on energy compensation filter is available (see below) that will flatten the energy response when dose measurements are required.

Specifications

Part Number: 47-1539

INDICATED USE: alpha, beta, and gamma survey; frisking, sample counting

DETECTOR: pancake-type, halogen-quenched GM

COMPATIBLE INSTRUMENTS: general purpose survey meters, ratemeters, and scalars

WINDOW: 1.7 ± 0.3 mg/cm² mica

WINDOW AREA: Active - 15.51 cm² (2.4 in²); Open - 12.26 cm² (1.9 in²)

EFFICIENCY (4m): ¹⁴C - 5%; ⁹⁰Sr/⁹⁰Y - 22%; ⁹⁹Tc - 19%; ³²P - 32%; ²³⁸Pu - 15%; ^{99m}Tc - \leq 1%; ¹²⁵I - 0.2%

SENSITIVITY: typically 3300 cpm per mR/hr (¹³⁷Cs gamma)

ENERGY RESPONSE: energy dependent (see optional energy filter for dose measurements below)

BACKGROUND: 60 cpm

DEAD TIME: typically 80 microseconds

OPERATING VOLTAGE: 900 Vdc

CONNECTOR: series "C" (others available)

CONSTRUCTION: aluminum housing with beige powder-coat finish, and stainless steel protective screen (79% open)

TEMPERATURE RANGE: -15 to 50 °C (5 to 122 °F); may be certified to operate from -40 to 65 °C (-40 to 150 °F)

SIZE (H x W x L): 4.6 x 6.9 x 27.2 cm (1.8 x 2.7 x 10.7 in.)

WEIGHT: 0.5 kg (1 lb)

ENVIRONMENTAL RATING: IP (Ingress Protection) rating of 53

Model 44-9 with
optional dose filter
(see below)



Also Available

Model 44-9DOSE: A Model 44-9 with Dose Filter installed
(Part Number: 47-3789)

Model 44-9-18: Extended Reach GM detector mounted on
gooseneck-type handle provides up to 0.9 m (36 in.) extension
(Part Number 47-2940)

Model 180-2 Sample Holder: Provides repeatable geometry for
counting wipes, filter paper, or slides, for samples up to 4.7 cm
(1.8 in.) diameter. (Part Number 47-1665)

Ambient Dose Equivalent Filter: The Model 44-9 GM pancake
detector has a significant over response at low energies which can
be corrected using this snap-on filter. It flattens response to within
 \pm 20% referenced to ¹³⁷Cs (662 keV) over an energy range of 20 keV
to 1.2 MeV. (Part Number: 2002-1050)

Model 44-88 Alpha-Beta-Gamma Detector



Introduction

The Model 44-88 GM (Geiger-Mueller) detector responds to alpha, beta, and gamma radiation. It energy-dependent, over-responding by a factor of 6 in the 60 keV to 100 keV range when normalized to ^{137}Cs . The GM tube is user-accessible for repair should it be required. The Model 44-88 detector will operate with any of the Ludlum Measurement instruments that provide 900 V and an input sensitivity of approximately 30 mV or higher.

Specifications

Part Number: 47-2356

INDICATED USE: alpha, beta, gamma survey; sample counting

DETECTOR TYPE: pancake-type, halogen-quenched GM

WINDOW: 1.7 + 0.3 mg/cm² mica

WINDOW AREA: 15 cm² (2.3 in²) active; 12 cm² (1.9 in²) open

EFFICIENCY (4π): ^{14}C - 5%; $^{90}\text{Sr}/^{90}\text{Y}$ - 22%; ^{99}Tc - 19%; ^{32}P - 32%; ^{239}Pu - 15%

SENSITIVITY (^{137}Cs gamma): 3300 cpm/mR/hr

ENERGY RESPONSE: energy dependent

BACKGROUND: 60 cpm

DEAD TIME: typically 80 microseconds

OPERATING VOLTAGE: 900 volts

CONSTRUCTION: aluminum housing, beige powder-coat, with 79% open stainless steel screen

SIZE: 5.9 x 7 cm (2.3 x 2.8 in.) (Dia x L)

WEIGHT: 0.2 kg (0.5 lb)

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August 2020

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Model 44-3

Low Energy Gamma Detector



Ludlum Measurements, Inc.



Specifications

Part Number: 47-1533

INDICATED USE: ^{125}I and low energy gamma survey

SUGGESTED INSTRUMENTS: general purpose survey meters, ratemeters, and scalars

DETECTOR TYPE: scintillator, 2.5 cm (1 in.) diameter x 1 mm thick NaI(Tl) crystal

ENTRY WINDOW: 18.4 mg/cm²

WINDOW AREA: 5 cm² (0.8 in²) active and open

SENSITIVITY: 675 cpm/ $\mu\text{R/hr}$ (^{125}I)

BACKGROUND (10 $\mu\text{R/hr}$): less than 250 cpm

EFFICIENCY (4 π): 33.5% for ^{125}I (based on ^{129}I efficiency of 18%)

RECOMMENDED ENERGY RANGE: 10 to 60 keV

ENERGY RESPONSE: energy dependent

PHOTOMULTIPLIER TUBE: 3.8 cm (1.5 in.) diameter

OPERATING VOLTAGE: typically 500 to 1200 volts

CONSTRUCTION: aluminum housing with beige powder coat finish

TEMPERATURE RANGE: -20 to 50 °C (-4 to 122 °F); may be certified to operate from -40 to 65 °C (-40 to 150 °F)

CONNECTOR: series "C" (others available)

SIZE: 5.1 X 17.8 cm (2 x 7 in.) (Dia x L)

WEIGHT: 0.5 kg (1 lb)

Options: Model 180-1, Model 180-1L, and Model 180-24 Sample Holders provide repeatable geometry for counting wipes, filter paper, or slides at user-selectable spacings of 0.32, 0.64, 1.3, 2.5, and 5.1 cm (0.125, 0.25, 0.5, 1, and 2 in.) from the detector.

Model 180-1: anodized aluminum frame, sample tray, and collimator (P/N 47-1675)

Model 180-1L: as above, but with 0.64 cm (0.25 in.) painted lead collimator (P/N 47-2988)

Model 180-24: anodized aluminum frame and sample tray (no collimator) (P/N 47-2631)

Planchets: 5.1 cm x 3.2 mm (2.0 x 0.125 in.) (Dia x thickness) in stainless steel or aluminum
Stainless Steel (P/N 7525-371-01); Aluminum (P/N 7525-371) Minimum order quantity of 500

Model L-4002-227: lead shielding/collimator for 5.1 cm (2 in.) OD detectors (P/N 4002-227)

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March 2015

Model 44-38

Beta & Low Energy Gamma Detector



Ludlum Measurements, Inc.



(window closed)

Specifications

Part Number: 47-1588

INDICATED USE: beta gamma survey

SUGGESTED INSTRUMENTS: general purpose survey meters, ratemeters, and scalars

CONNECTOR: series "C" (others available)

DETECTOR: 30–45 mg/cm² stainless steel wall halogen quenched GM

DETECTION RANGE: ± 10% up to 50 mR/hr without DTC, and up to 500 mR/hr with DTC

SENSITIVITY: 1200 cpm per mR/hr (¹³⁷Cs gamma) with window closed

BACKGROUND: 20 cpm closed; 25 cpm open

GAMMA ENERGY RESPONSE (window closed): within 20% of ¹³⁷Cs (662 keV) from 60 keV to 1.3 MeV

DEAD TIME: typically 95 microseconds

OPERATING VOLTAGE: typically 900 volts

CONSTRUCTION: anodized aluminum housing with rotary beta window

WINDOW CONSTRUCTION: tin shields mounted on aluminum with a solid aluminum gap in the middle

Low Energy Blocking Window: tin and aluminum segments are 1353 mg/cm²

Low Energy Pass Through Window: the middle aluminum segment is 610 mg/cm²

TEMPERATURE RANGE: -20 to 50 °C (-4 to 122 °F); may be certified to operate at -40 to 65 °C (-40 to 150 °F)

SIZE: 3.3 x 16.5 cm (1.3 x 6.5 in.) (Dia x L)

WEIGHT: 0.5 kg (1.0 lb)

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July 2016

Model 26 Integrated Frisker

Part Number: 48-3885

Features

- Integrated, Lightweight Design Simplifies Frisking
- High-Impact Plastic with Water-Resistant Rubber Seals
- Employs Standard 15.51 cm² GM Pancake Detector
- Ratemeter, Peak, and Scaler Operating Modes
- Simple Two-Button Operation
- Count Rate and Scaler Alarms
- Automatic LCD Backlight Activation
- Comfortable Non-Slip Grip
- Includes Lanyard & Adjustable Wrist Strap



The Model 26 includes a comfortable, adjustable wrist cuff and clip-on lanyard.



Introduction

Frisking people and objects for alpha & beta contamination has always been a little awkward because manipulation of the cable, detector, and electronics required the use of both hands. The new cable-less Ludlum Model 26 consolidates the electronics and the detector into one ergonomic housing. This optimized configuration incorporates a standard 15.51 cm² GM pancake probe, loud audio "click" output, and large auto-ranging LCD display with automatic LCD backlighting into one convenient package, making it easier than ever to detect contamination.

Operation is simple requiring the use of just two buttons. A useful feature in the design is MAX mode, which captures the highest or peak count rate. It is particularly convenient whenever the display is not directly visible. The scaler mode, with a preset count time, allows the user to take a discrete measurement. This system also incorporates low power circuitry, delivering hundreds of hours of use with two standard "AA" size batteries. The calibrator can protect parameters (cps/cpm, response time, alarm points, & scaler time) or allow the user to adjust them.

Specifications

DETECTOR: pancake GM (Geiger-Mueller) detector, stainless steel screen (79% open)

WINDOW AREA: Active: 15.51 cm² (2.4 in²); Open: 12.26 cm² (1.9 in²)

EFFICIENCY (4m): Alpha - ²³⁹Pu: 11%; Beta - ⁹⁰Tc: 18%, ¹³²P: 32%, ¹⁴C: 2%, ⁹⁰Sr/⁹⁰Y: 22%; ¹²⁵I: 0.2%; Gamma - 5.5 cps per μ Sv/hr (3300 cpm per mR/hr) (¹³⁷Cs), ^{99m}Tc: \leq 1%

DISPLAY: 3½ digit LCD with 12.7 mm (0.5 in.) digits, low-battery indicator, MAX, ALARM; Units: (k)cps, (k)cpm

RANGE: 0.1 cps to 1.99 kcps; 1 cpm to 99.9 kcpm

LINEARITY: \pm 10%

BACKLIGHT: built-in ambient light sensor automatically activates low-power LED backlight, or may be configured for 'Continuous On' operations (will reduce battery life)

CONTROLS: two pushbuttons

• ON/OFF/QUIET: press to turn ON, tap to alternate between 'click' audio and QUIET, hold for OFF

• MODE: alternates between NORMAL (count rate) and MAX (captures peak rate), and SCALER (user-selectable preset count time from 0 to 20 minutes)

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

RESOLVING TIME: approximately 110 microseconds as defined by IEC 60325

ALARMS: count rate and scaler alarm setpoints adjustable over the display range

OVERLOAD PROTECTION: high count rate saturation protection prevents false display of lower count rates, indicated by flashing display and audio alarm

LOSS OF COUNT PROTECTION: after 60 seconds of no pulses from detector, unit will flash a zero reading and trigger alarm audio

CLICK AUDIO: greater than 60 dB at 0.6 m (2 ft)

HV TESTPOINT: accessible by removing battery cover, allows HV measurement and pulse injection for calibration using optional cable (PN 8303-1044)

TEMPERATURE RANGE: -20 to 50 °C (-4 to 122 °F), may be certified for operation from -40 to 65 °C (-40 to 150 °F)

ENVIRONMENTAL RATING: NEMA 3 / IP 53

POWER: two "AA" batteries, approximately 1000 hours of operation (as low as 500 hours with backlight configured for 'Continuous On'), 16-hour low battery warning

CONSTRUCTION: high-impact polycarbonate plastic with water-resistant rubber seals, separate battery compartment, and rubber overmold

DISTANCE FROM SURFACE PLANE TO SCREEN: 0.32 cm (0.125 inch)

SIZE (H x W x L): 4.6 x 6.9 x 27.2 cm (1.8 x 2.7 x 10.7 in.)

WEIGHT: 0.45 kg (1.0 lb)

Options include

Ambient Dose Equivalent Filter Kit: includes filter and replacement screen (PN 2002-1050)

Headphone Jack: standard 1/8 in. jack for headphones (not supplied) (PN 4498-538)

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Jan 2023

Model 26-1 & 26-1DOSE Integrated Frisker

Features

- Integrated, Lightweight Ergonomic Design
- High-Impact Plastic with Water-Resistant Rubber Seals
- Employs Standard 15.51 cm² GM Pancake Detector
- Displays in mR/hr, μ Sv/h, dpm, Bq, cpm, or cps
- Dead-Time Correction (DTC) Allows Gamma Measurements Up to 500 mR/hr or Up to 1999 μ Sv/h
- Simple Three-Button Operation
- Count Rate, Exposure, Dose, and Counting Alarms
- Automatic Display Backlight
- Bright Red, Flashing Alarm LED
- Includes Wrist Strap, Detector Cover & Lanyard



Model 26-1
Part Number: 48-3965



Model 26-1DOSE
Part Number: 48-4007

Introduction

The Model 26-1 Integrated Frisker is designed to simplify the process of detecting radioactive contamination on people and objects. Unlike other meter and detector combinations that require two-handed operation, this instrument combines the meter electronics and detector in a single, easy-to-use tool. Its design incorporates a 15.51 cm² (2.4 in²) GM pancake detector, an easy-to-read LCD screen, an ergonomic handle, and a simple three-button interface to allow one-handed operation.

Three modes of operation are available — RATE, MAX, and COUNT — which can be selected by pressing the MODE button. RATE mode displays the current count, exposure, or activity rate. MAX mode captures the highest count, exposure, or activity rate detected; this is useful for finding a peak rate or for frisking when the display is not visible. COUNT mode allows the operator to perform a survey for a preset amount of time; depending on the chosen units, the count result can be a scaler count, a time-averaged rate, a time-averaged exposure or dose rate, or an integrated exposure or dose. Measurements can be displayed in units of cps, cpm, dpm, Bq, mR/h, or μ Sv/h. The user can switch between two sets of chosen units (primary and secondary) for RATE and MAX modes by pressing the UNITS button.

Other features include an auto-ranging and backlit LCD screen, "click" audio (which can be silenced), and user-settable count rate and scaler alarms. The instrument body is made of high-impact plastic and water-resistant construction allows the instrument to be used outdoors. A wrist strap and lanyard are included for keeping the instrument close and secure. The instrument is powered by two alkaline AA batteries with a battery life up to 1000 hours.

Ambient Dose Equivalent Filter

The GM pancake detector has a significant over-response to gamma energies between 20 - 150 keV (see Energy Response graph on back), which produces dose measurement errors. Ludlum offers an ambient dose equivalent filter that flattens the detector's energy response to within \pm 20% referenced to ¹³⁷Cs (662 keV) over the energy range of 20 keV to 1.2 MeV. The filter simply snaps on over the detector window when dose measurements are required, and is easily removed when not needed. The dose filter is included with the Model 26-1DOSE (PN 48-4007), or it is available separately as an option (PN 2002-1050).

Specifications

DETECTOR: pancake GM (Geiger-Mueller) detector, stainless steel screen (79% open)

WINDOW AREA:

Active: 15.51 cm² (2.4 in²)

Open: 12.26 cm² (1.9 in²)

EFFICIENCY (4π):

Alpha: ²³⁹Pu - 11%

Beta: ⁹⁹Tc - 18%; ³²P - 32%; ¹⁴C - 2%; ⁹⁰Sr/⁹⁰Y - 22%, ¹²⁵I - 0.2%

Gamma: 5.5 cps per μSv/hr (3300 cpm per mR/hr) (¹³⁷Cs), ^{99m}Tc - ≤1%

DISPLAY: 3½ digit LCD with large 12.7 mm (0.5 in.) digits, low battery indicator, MAX, ALARM; Units: (k)cps, (k)cpm, (k)dpm, (k)Bq, mR/hr, μSv/h

DISPLAY RANGE:

- 0.00 cps to 19.9 kcps
- 0 cpm to 999 kcpm
- 0.00 Bq to 19.9 kBq
- 0 dpm to 999 kdpm
- 0.00 to 500 mR/h
- 0.00 to 1999 μSv/h

LINEARITY: ±10%

BACKLIGHT: built-in ambient light sensor automatically activates low-power LED backlight, or may be configured for 'Continuous On' (will reduce battery life)

CONTROLS: three pushbuttons

- ON/OFF/QUIET: press to turn ON; tap to alternate between 'click' audio and QUIET; hold for OFF
- MODE: alternates between RATE (count rate), MAX (captures peak rate), and COUNT (preset count time from 0 to 20 min.)
- UNITS: changes units between count rate (cpm, cps), dose/exposure (μSv/h, mR/hr), or activity (dpm, Bq)

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

RESOLVING TIME: approximately 110 μs as defined by IEC 60325

ALARMS: count rate and scaler alarm set-points adjustable over the display range

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

LOSS OF COUNT PROTECTION: after 60 seconds of no pulses from detector, unit will flash a zero reading and the alarm audio will be triggered

CLICK AUDIO: greater than 60 dB at 0.6 m (2 ft)

HV TESTPOINT: accessible by removing battery cover, allows HV measurement and pulse injection for calibration using optional cable (PN 8303-1044)

TEMPERATURE RANGE: -20 to 50 °C (-4 to 122 °F), may be certified for operation from -40 to 65 °C (-40 to 150 °F)

ENVIRONMENTAL RATING: NEMA 3, IP 53

POWER: two "AA" batteries

BATTERY LIFE: approximately 1000 hours of operation (as low as 500 hours with backlight configured for 'Continuous On'), 16-hour low battery warning

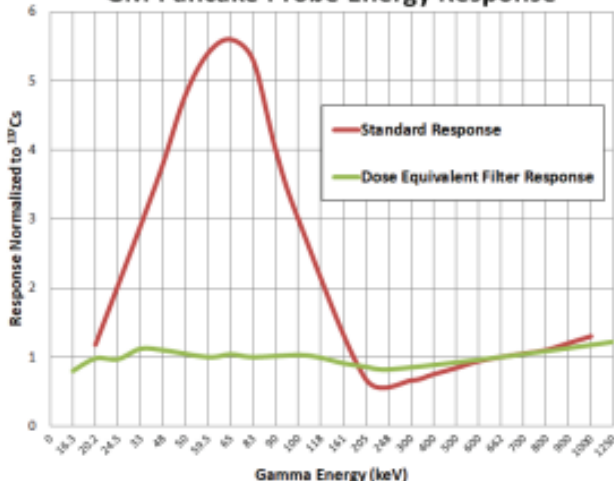
CONSTRUCTION: high-impact plastic with water-resistant rubber seals and separate battery compartment

DISTANCE FROM SURFACE PLANE TO SCREEN: 0.32 cm (0.125 inch)

SIZE (H x W x L): 4.6 x 6.9 x 27.2 cm (1.8 x 2.7 x 10.7 in.)

WEIGHT: 0.45 kg (1.0 lb)

GM Pancake Probe Energy Response



Options

- **Ambient Dose Equivalent Filter (PN 2002-1050):** Flattens the GM detector energy response to within ± 20% referenced to ¹³⁷Cs (662 keV) over the energy range of 20 keV to 1.2 MeV. Included with Model 26-1DOSE.
- **Headphone Jack (PN 4498-538):** Standard 1/8 in. jack to allow operator to plug in headphones (not supplied).

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Model 9DP

Pressurized Ion Chamber



Ludlum Measurements, Inc.

FEATURES

- 0–50 mSv/h (0–5 R/hr; 0–50 mGy/h) Range with μ R/hr Sensitivity
- Simultaneous Rate and Integrate or Peak Hold Readouts
- Sunlight Readable Color Display
- Auto Zeroing & Ranging
- Rechargeable Batteries
- Alarming Capability
- Data Logging
- USB Connectivity
- Free Firmware Updates through Internet

Introduction

The Ludlum Model 9DP pressurized ion chamber meter provides highly sensitive measurements of exposure or dose. It can simultaneously display the rate and either integrated value or highest rate (peak) seen by the instrument. The integrated value or peak rate can be reset using one of the four convenient front panel mounted buttons.

The stunning 256K color, bit-mapped display provides an optimized presentation of the data and is accompanied with icons informing the user of the active functions and instrument status. All logged data can be written in csv format to a standard USB thumb drive for convenient retrieval by a PC spreadsheet or database program. Alarms are manifested using color changes on the display and an acknowledgeable audio output.

The Model 9DP is part of Ludlum's Dimension series of meters employing state-of-the-art technologies that deliver tremendous capability, user-friendliness, and convenient PC connectivity. Instrument users have access to personal preference type settings by connecting directly to a USB keyboard (with no additional USB ports, and no integrated mouse or trackpad or sound controls). Ludlum also sells a Dimension Interface Package that facilitates complete setup and calibration programming under administrator controlled password protection.

Options

- | | |
|--|--------------|
| Dimension Interface Package: | PN: 4293-763 |
| Audio Jack Output: | PN: 4293-891 |
| Alkaline Battery Pack: | PN: 4543-028 |
| Check Source, 10 μ Cl ¹³⁷ Cs: | PN: 01-5231 |
| Carrying Case: | PN: 2313065 |

NOTE: This instrument is considered HAZMAT and requires HAZMAT training to ship. Please see the instrument manual for details.



Part No.: 48-3742



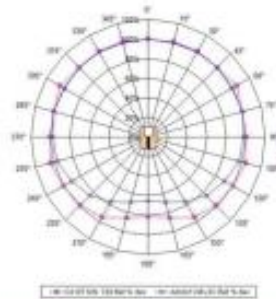
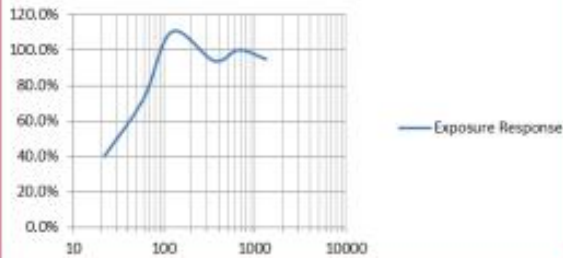
Model 9DP

Pressurized Ion Chamber



Ludlum Measurements, Inc.

Model 9DP Exposure Energy Response Relative to Cs-137



Specifications

RADIATION DETECTED: beta above 1 MeV; gamma & X-rays above 25 keV

OPERATING RANGES: Sv/h units: 0–5 μ Sv/h, 0–50 μ Sv/h, 0–500 μ Sv/h, 0–5 mSv/h, 0–50 mSv/h

R/hr units: 0–500 μ R/hr, 0–5 mR/hr, 0–50 mR/hr, 0–500 mR/hr, 0–5 R/hr

Gy/h units: 0–5 μ Gy/h, 0–50 μ Gy/h, 0–500 μ Gy/h, 0–5 mGy/h, 0–50 mGy/h

CHAMBER VOLUME: 230 cm³ (14 in³) volume pressurized to 8 atmospheres (117 psi \pm 5 psi)

CHAMBER DENSITY: chamber wall density is 601.7 mg/cm³; can wall density is 332.5 mg/cm³. Total density of chamber + can is 934.2 mg/cm³

RESPONSE TIME: ranges from five seconds in lowest range to under two seconds in highest range when measuring from 10% to 90% of final value

GEOTROPISM: less than 1%

ACCURACY: \pm 10%

MEASUREMENT READOUTS: simultaneous display of rate and either the integrated value or highest rate (peak)

MINIMUM READOUT: 0.01 μ Sv/h (0.1 μ R/hr, 0.01 μ Gy/h)

LCD DISPLAY: 8.9 cm (3.5 in.) diagonal, 240 H x 320 W pixels, TFT active matrix, >256k colors, 220 cd/m², automatic sensor-controlled backlighting

USER CONTROLS: 4 push buttons: Instrument on/off, Function (for peak rate/integrate modes), Audio on/off, and Asterisk (for alarm acknowledge/meter reset/clearing integrated dose or peak rate)

AUTOMATIC FUNCTIONS: auto ranging, auto zeroing, auto LCD backlighting

DATA STREAMING: Stored to detachable USB thumb drive in CSV format for easy retrieval by PC spreadsheet/database programs. Data points include date and time, rate, integrated reading, and instrument status. Logging time intervals are set by PC interface program.

AUDIO OUTPUTS: built-in unimorph speaker > 60 dB at 0.6 m (2 ft), optional audio jack available for connection to external (optional) headset

ALARMS: Two available user-programmable levels of radiation alarms, each is user programmable throughout entire readout range.

USB INTERFACE: single USB port, connects directly to a USB keyboard (with no additional USB ports, and no integrated mouse or trackpad or audio controls) to facilitate password-protected parameter changes, accepts USB thumbdrive for storing logged data, or to an optional Dimension Interface Package (# 4293-763) that facilitates PC parameter editing and calibration

TEMPERATURE RANGE: -20 to 40 °C (-4 to 104 °F)

WARM UP TIME: < 1 minute when the instrument is in temperature equilibrium with the surrounding environment

DRIFT: less than 0.3 μ Sv/h (0.03 mR/hr; 0.3 μ Gy/h)

HUMIDITY: 0–95%, non-condensing

POWER: eight rechargeable AA NiMH batteries, supplied with wall charger for direct connection to instrument

BATTERY LIFE: approximately 12 to 30 hours between charges depending primarily upon use of backlighting and USB usage

CONSTRUCTION: durable plastic accompanied by internal metal frame support

SIZE: 21.9 x 11.6 x 24.5 cm (8.6 x 4.6 x 9.6 in.) (H x W x L)

WEIGHT: 1.5 kg (3.3 lb), including batteries

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