LUDLUM MEASUREMENTS, INC.

Model 26-1 & 26-1DOSE
Integrated Frisker

Features

- Integrated, Lightweight Ergonomic Design
- High-Impact Plastic with Water-Resistant Rubber Seals
- Employs Standard 15.51 cm^2 GM Pancake Detector
- Displays in mR/hr, µSv/h, dpm, Bq, cpm, or cps
- Dead-Time Correction (DTC) Allows Gamma Measurements Up to 500 mR/hr or Up to 1999 µSv/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 cm^2 (2.4 in^2) 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 µSv/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 ± 20% referenced to ^{137}Cs (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).

Ludlum Measurements, Inc. P.O. Box 810, Sweetwater, Texas 79556
Web: ludlums.com **Tel**: 800-622-0828 / 325-235-5494 **Fax**: 325-235-4672 **Email**: sales@ludlums.com

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Specifications

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

WINDOW AREA:
Active: 15.51 cm^2 (2.4 in^2)
Open: 12.26 cm^2 (1.9 in^2)

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

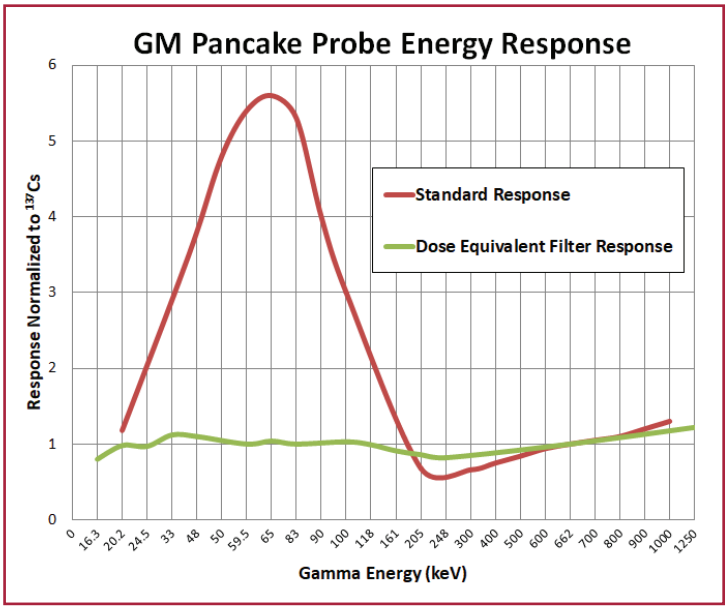
BATTERY LIFE: approximately 1000 hours of operation (as low as 500 hours with backlight configured for 'Continuous On'), 16-hour low battery warning

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)



Options

- **Ambient Dose Equivalent Filter (PN 2002-1050):** Flattens the GM detector energy response to within ± 20% referenced to ^{137}Cs (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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