LUDLUM MEASUREMENTS, INC.

Model 26-1 DOSE
Integrated GM Frisker with Dose Filter

Features

- Integrated, Lightweight Ergonomic Design
- High-Impact Plastic with Water-Resistant Rubber Seals
- 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, Clear Pancake Cover, & Lanyard

above left: filter in place
above: instrument face

Introduction

Ludlum Model 26-1 DOSE integrates a time-tested Geiger-Mueller (GM) detector with compact electronics in an ergonomic, rugged, and water-resistant housing. The simple shape uses no exterior cabling thereby simplifying the process of frisking people and objects. The instrument also features a loud audible "click" output, large auto-ranging LCD display with automatic LCD backlighting, and an easy-to-use Units button to change the displayed measurements in terms of mR/hr, µSv/h, dpm, or Bq.

The user-selected units can display results in a measurement of scaler counts, activity (disintegrations), time-averaged rates, or even accumulated dose. The included filter snaps in place to provide a flat gamma energy response for accurate measurements of exposure/dose.

Operation of the Model 26-1 DOSE is kept simple through the use of just three buttons strategically placed for one-handed operation. Three modes of operation – RATE, MAX, and COUNT- are available. RATE will display current radiation levels in terms of rate. MAX captures the highest rate detected to enable the operator to determine a peak rate during frisking operations when the display is not visible. COUNT mode provides surveys for a pre-determined time.

Low-power circuitry means two standard "AA" sized batteries deliver hundreds of hours of instrument operation. The parameters may be protected via internal dipswitch, or the calibrator may allow the user to adjust them. Other features include a backlight triggered by low-level ambient lighting (may be configured for "Continuous On" operation).

Specifications

Part Number: 48-4007

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%, 22% for ^{90}Sr/^{90}Y, ^{125}I: 0.2%; Gamma - 5.5 cps per µSv/hr (3300 cpm per mR/hr) or (^{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, Bq, dpm
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 1999 µSv/h; 0.00 to 500 mR/h
LINEARITY: ± 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: three pushbuttons
  • ON/OFF/QUIET: press to turn ON, tap to alternate between 'click' audio and QUIET, hold for OFF
  • MODE: select NORMAL (count rate), MAX (captures peak rate), or COUNTER (user-selectable count time from 0–20 minutes)
  • UNITS: changes units from count rate (cpm, cps) to dose/exposure (µSv/h, mR/hr) to activity (dpm/Bq)
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
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)
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 operations (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)

OPTION: standard 1/8 in. jack to allow operator to plug in headphones (not supplied) (PN 4498-538)