

## Model 44-9-18 Telescoping GM Pancake Probe

Part Number: 47-2940

### Introduction

The GM pancake-type detector in the Model 44-9-18 is arguably the most popular radiation detector used throughout the world. This detector is sensitive to alpha, beta, and gamma radiation, is enclosed within a rugged metal enclosure, and is conveniently shaped and sized for checking contamination on people and objects. The telescoping handle extends the reach to 0.9 m (36 in.) for greater versatility, and the detector head is mounted on a flexible tube for easy head angle adjustment.

This detector operates between 850 to 1000 volts, and is compatible with any Ludlum instrument capable of supplying 900 Vdc and an input sensitivity of 30 mV or higher.

### Specifications

**INDICATED USE:** alpha beta gamma survey; frisking

**DETECTOR:** pancake type, halogen quenched GM

**WINDOW:**  $2.0 \pm 0.3$  mg/cm<sup>2</sup> mica with 79% open stainless steel screen

**WINDOW AREA:**

Active - 15.51 cm<sup>2</sup> (2.4 in<sup>2</sup>)

Open - 12.26 cm<sup>2</sup> (1.9 in<sup>2</sup>)

**EFFICIENCY** (4 $\pi$  geometry): typically 5% for <sup>14</sup>C; 22% for <sup>90</sup>Sr/<sup>90</sup>Y; 15% for <sup>99</sup>Tc; 32% for <sup>32</sup>P; 15% for <sup>239</sup>Pu; 0.2% for <sup>125</sup>I

**SENSITIVITY:** typically 3300 cpm/mR/hr (<sup>137</sup>Cs gamma)

**ENERGY RESPONSE:** energy dependent, see Ludlum's optional energy filters

**H\*(10) ENERGY RESPONSE (with optional filter 2002-1050):** within 20% from 20 keV to 1.2 MeV

(see optional energy filter for dose measurements)

**DEAD TIME:** typically 80 microseconds

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

**OPERATING VOLTAGE:** 900 volts

**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:** 4.6 x 6.9 x 58.4 cm (1.8 x 2.7 x 23 in.) (H x W x L); 91.4 cm (36 in.) fully extended, with gooseneck type flexible extension handle



### Options

**Model 44-9EXP** Model 44-9 with Exposure Filter (Part Number: 47-3788)

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

**Model 44-9-18** Extended Reach GM detector mounted on gooseneck-type mount 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)

The Model 44-9 GM pancake detector has a significant over response at low energies which can be corrected using the snap-on filters offered below (serial #97000 and up):

**Exposure Filter Kit:** flattens the response to within  $\pm 20\%$  referenced to <sup>137</sup>Cs (662 keV) over an energy range of 33 keV to 1.2 MeV (Part Number: 4002-1066)

**Ambient Dose Equivalent Filter:** flattens response to within  $\pm 20\%$  referenced to <sup>137</sup>Cs (662 keV) over an energy range of 20 keV to 1.2 MeV (Part Number: 2002-1050)