

# Model 44-88

## Alpha Beta Gamma Detector

*Radiation Detection for a Safer World*



Ludlum Measurements, Inc.



Part Number: 47-2356

### Introduction

The Model 44-88 (Part Number 47-2356) and Model 44-88-1 (Part Number 47-3918) GM (pancake) detectors are similar instruments that vary in length. Both detectors respond to alpha, beta, and gamma radiation. The detectors are energy-dependent, over-responding by a factor of 6 in the 60 keV to 100 keV range when normalized to  $^{137}\text{Cs}$ . The GM tube is user-accessible for repair should it be required. The Model 44-88 and Model 44-88-1 detectors will operate with any of the Ludlum Measurement instruments that provide 900 V and an input sensitivity of approximately 30 mV or higher.

### Specifications

INDICATED USE: alpha, beta, gamma survey; sample counting  
DETECTOR TYPE: pancake-type, halogen-quenched GM  
WINDOW:  $1.7 + 0.3 \text{ mg/cm}^2$  mica  
WINDOW AREA:  $15 \text{ cm}^2$  ( $2.3 \text{ in}^2$ ) active;  $12 \text{ cm}^2$  ( $1.9 \text{ in}^2$ ) open  
EFFICIENCY ( $4\pi$ ): 5% for  $^{14}\text{C}$ ; 22% for  $^{90}\text{Sr}/^{90}\text{Y}$ ; 19% for  $^{99}\text{Tc}$ ; 32% for  $^{32}\text{P}$ ; 15% for  $^{239}\text{Pu}$   
SENSITIVITY ( $^{137}\text{Cs}$  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 beryllium copper screen  
SIZE: Model 44-88:  $5.9 \times 7 \text{ cm}$  ( $2.3 \times 2.8 \text{ in.}$ ) (Dia x L)  
Model 44-88-1:  $5.9 \times 14 \text{ cm}$  ( $2.3 \times 5.5 \text{ in.}$ ) (Dia x L)  
WEIGHT: 0.2 kg (0.5 lb)