

# Model 15 Neutron Count Ratemeter

*Radiation Detection for a Safer World*



Ludlum Measurements, Inc.

## Features

- Neutron Detector with Removable Moderator
- Alpha Beta Gamma GM Detector
- 4-Decade Analog Ratemeter
- Rugged
- Complete Turn-Key System



Part Number: 48-1614

## Specifications

INDICATED USE: alpha, beta, gamma, neutron detection

### NEUTRON DETECTOR

- o Type: 2 atmosphere  $^3\text{He}$  proportional detector with 7.6 cm (3 in.) diameter, cadmium-lined (removable) moderator for thermal neutrons, Model 42-14H
- o Sensitivity: 55 cpm/mRem/hr, Bare  $^{241}\text{AmBe}$
- o Gamma Rejection: < 10 cpm through 10 R/hr ( $^{137}\text{Cs}$  gamma)
- o Detection Range: thermal to approximately 12 MeV
- o Energy Response: not linear through energy spectrum (0.025–12.0 MeV)

### ALPHA, BETA - GAMMA DETECTOR

- o Detector Type: thin end-window GM detector, Model 44-7
- o Window:  $1.7 \pm 0.3$  mg/cm<sup>2</sup> mica
- o Window Area: active: 6.4 cm<sup>2</sup> (1 in<sup>2</sup>), open: 5.2 cm<sup>2</sup> (0.8 in<sup>2</sup>)
- o Sensitivity: typically 2100 cpm/mR/hr ( $^{137}\text{Cs}$  gamma)
- o Background:  $\approx 40$  cpm
- o Efficiency (4 $\pi$ ): 2%– $^{14}\text{C}$ ; 10%– $^{90}\text{Sr}/^{90}\text{Y}$ ; 7%– $^{239}\text{Pu}$
- o Energy Response: energy dependent

INSTRUMENT RANGE: 0-500,000 cpm

LINEARITY:  $\pm 10\%$  of true value

METER: 6.4 cm (2.5 in.) arc, pivot-and-jewell suspension

METER DIAL: 0-500 cpm, 0-2.5 kV, BAT TEST

MULTIPLIERS: x1, x10, x100, x1000

Audio: On/Off switch

AUDIO: built-in unimorph speaker with on/off switch, greater than 60 dB at 61 cm (2 ft)

CONNECTOR: series "C"

POWER: 2 each "D" cell batteries, housed in sealed compartment that is externally accessible

BATTERY LIFE:  $\approx 600$  hours with alkaline batteries, can be checked on meter

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

SIZE: 31.8 x 8.9 x 21.6 cm (12.5 x 3.5 x 8.5 in.) (H x W x L)