

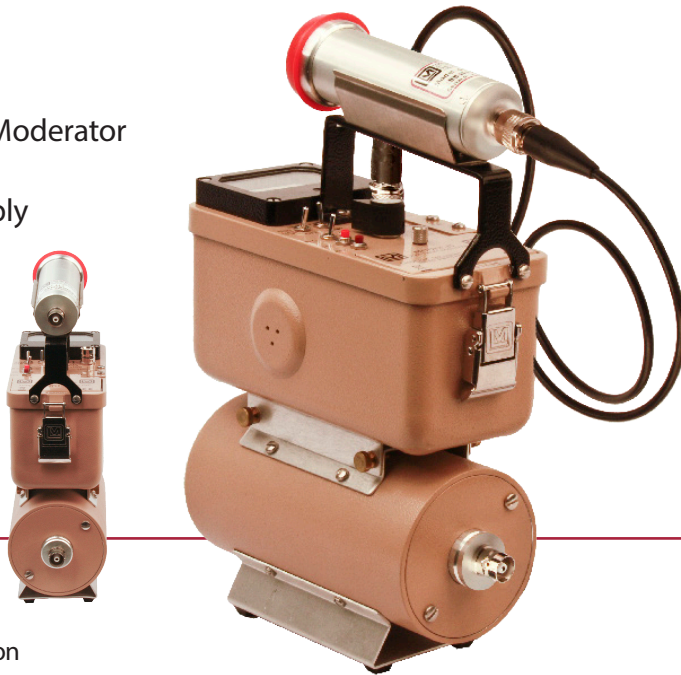
# Model 15 Neutron Count Ratemeter



Ludlum Measurements, Inc.

## Features

- Neutron Detector with Removable Moderator
- Alpha Beta Gamma GM Detector
- Regulated High-Voltage Power Supply
- 4-Range Analog Ratemeter
- Rugged
- Complete Turn-Key System
- C Connector (others available)  
Permit Simple Switching to the  
Other Detector



## Specifications

Part Number: 48-1614

**INDICATED USE:** alpha, beta, gamma, neutron detection

### NEUTRON DETECTOR

- 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
- Energy Response: count response nonlinear throughout energy spectrum (0.025–12.0 MeV)
- Sensitivity: 55 cpm/mRem/hr, Bare  $^{241}\text{AmBe}$
- Gamma Rejection: < 10 cpm through 10 R/hr ( $^{137}\text{Cs}$  gamma)
- Detection Range: thermal to approximately 12 MeV

### ALPHA - BETA - GAMMA DETECTOR

- Detector Type: thin end-window GM detector, Model 44-7
- Window:  $2.0 \pm 0.3 \text{ mg/cm}^2$  mica
- Window Area: active:  $6.4 \text{ cm}^2$  (1 in $^2$ ), open:  $5.2 \text{ cm}^2$  (0.8 in $^2$ )
- Sensitivity: typically 2100 cpm/mR/hr ( $^{137}\text{Cs}$  gamma)
- Background: typically 40 cpm
- Efficiency (4 $\pi$ ): 2% for  $^{14}\text{C}$ ; 10% for  $^{90}\text{Sr}/^{90}\text{Y}$ ; 7% for  $^{239}\text{Pu}$
- 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

**INSTRUMENT HIGH VOLTAGE:** adjustable from 200 to 2500 V

**AUDIO:** built-in unimorph speaker with ON-OFF switch, greater than 60 dB at 61 cm (2 ft)

**CONNECTOR:** series "C" (others available)

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

**BATTERY LIFE:** approximately 600 hours with alkaline batteries, can be checked on meter

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

**CONSTRUCTION:** cast and drawn aluminum with beige powder coat

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

**WEIGHT:** 3.7 kg (8.1 lb)

