

Model 42-41L PRESCILA Neutron Detector



Ludlum Measurements, Inc.

Features

- PRESCILA Proton Recoil Scintillator
 - Drop Resistant to 100 g in Three Directions
 - Works with a Variety of Instruments
 - Ergonomic Alternative to REM-Ball
- Designs for Hand-Held Surveys



Introduction

The Ludlum Model 42-41L PRESCILA Neutron Detector is a viable and ergonomically superior alternative to traditional REM-ball designs for handheld radiation surveys, proven through extensive performance and field testing by the Health, Safety, and Radiation Protection Division of Los Alamos National Laboratory (LANL). This detector features a low-weight probe capable of excellent sensitivity of 350 cpm for $^{241}\text{AmBe}$ and extended energy response to over 20 MeV. Directional response is uniform ($\pm 15\%$) over a wide range of energies. Response linearity has been characterized to a dose rate exceeding 20 mSv h^{-1} and can be extended to 2 mSv h^{-1} when using dynamic gamma compensation. Gamma rejection is effective in gamma fields up to about 1 mSv h^{-1} , and can be extended to 2 mSv h^{-1} when using dynamic gamma compensation.



Model 42-41L with Model 2363
Neutron Dose Ratemeter

Specifications

Part Number: 47-3309

INDICATED USE: neutron survey and dose measurement

DETECTOR: PRESCILA Proton Recoil Scintillator

PHOTOMULTIPLIER TUBE: 2.9 cm (1.13 in.) diameter

SENSITIVITY: approximately 350 cpm/mrem/hr ($^{241}\text{AmBe}$)

NEUTRON ENERGY RESPONSE: thermal to 100 MeV

ANGULAR DEPENDENCE: within 15% over a wide range of energies

GAMMA REJECTION: approximately 400 cpm at 100 mR/hr with (^{137}Cs)

TYPICAL BACKGROUND: approximately 12 cpm (0.05 mrem/hr)

OPERATING VOLTAGE: typically 500 to 700 volts

DETECTOR CONNECTOR: type "C" series (others available)

CONSTRUCTION: aluminum housing with black powder coat finish and foam grip

TEMPERATURE RANGE: temperature dependent

DROP RESISTANCE: survives 100g drops in three orientations

SIZE: 25.7 x 10.8 x 10.8 cm (10.1 x 4.3 x 4.3 in.) (H x W x L)

WEIGHT: 2.3 kg (5 lb)

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Note: specifications subject to change without notification. We are not responsible for errors or omissions.

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