Model 3030E with Model 43-10-1
Alpha/Beta Sample Counter

Ludlum Measurements, Inc.

Features

- Alpha Beta Dual Channel Sample Counter
- Simultaneous Alpha & Beta Counting
- 5.1 cm (2 in.) Diameter Sample Tray
- Independent Readouts
- CPM & DPM Modes
- Alpha/Beta Alarms
- QC Check
- 8-Hour Battery Operation
- Real Time Clock
- RS-232 Interface
- Includes PC Software

Introduction

This system joins Ludlum's Model 3030E dual channel scaler with a Model 43-10-1 dual phosphor detector sample tray to produce a complete alpha beta sample counting system. The 3030E electronics incorporates independent backlit LCD readouts to support discriminated alpha and beta sample counting. The system features background subtraction, crosstalk correction, separate alpha/beta alarms, CPM/DPM operating modes, and a pre-scripted QC function with automatic reminder timer.

The instrument supports both 110 and 220 Vac operation, and includes a trickle-charged gel-cell battery for portable offsite use for up to eight hours. Status indicators located along the front panel inform the operator when another QC check is required, if the detector is nonfunctional, if it is operating in DPM or CPM mode, and if either an alpha or beta alarm setpoint has been exceeded.

Specifications

Part Number: 48-3456

TUBE: 5.1 cm (2 in.) diameter magnetically shielded photomultiplier
WINDOW: 0.4 mg/cm^2 aluminized Mylar
ACTIVE and OPEN AREA: 20.3 cm^2
SAMPLE HOLDER: aluminum housing with sample tray capable of holding a 2.5 cm (1 in.) or 5.1 cm (2 in.) diameter sample up to 1.02 cm (0.4 in.) thick
EFFICIENCY (4π):
alpha: 37% for ^{239}Pu; 32% for ^{230}Th; 39% for ^{238}U
beta: 5% for ^{14}C; 27% for ^{99}Tc; 29% for ^{137}Cs; 26% for ^{90}Sr/^{90}Y
CROSS TALK:
alpha to beta: 10% or less
beta to alpha: 1% or less
BACKGROUND:
alpha: 3 cpm or less
beta-gamma: typically 80 cpm or less (10 µR/hr field)
SOFTWARE: PC based to perform setup and calibration routines including background subtract, crosstalk correction, cpm/dpm modes, daily QC check parameters, alarm levels, and automatic plateaus. All parameters are stored in the instrument in non-volatile memory. The supplied software is capable of logging and storing the following: Sample Number, Sample Date, Sample Time, Alpha Count, Beta Count, Sample Type, Comments
ELECTRONICS:
size: 24.1 x 13.5 x 25.4 (9.5 x 5.3 x 10.0 in.) (H x W x D)
weight: approximately 2.7 kg (6 lb)
DETECTOR:
size: 23.6 x 11.4 x 23.6 cm (9.3 x 4.5 x 9.3 in.) (H x W x L)
weight: 1.9 kg (4.1 lb)

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