

## Model 3030E Alpha/Beta Scaler

### Features

- Alpha Beta Dual Channel Sample Counter
- Simultaneous Alpha & Beta Counting
- Sample Tray capable of taking 60mm papers
- Independent Readouts
- CPM & DPM Modes
- Background Subtraction
- Alpha/Beta Alarms
- QC Check
- 8-Hour Battery Operation
- Real Time Clock
- RS-232 Interface
- Includes PC Software



**INDICATED USE:** Simultaneous Alpha/Beta sample counting

**AUDIO:** Built in unimorph type speaker with volume control to provide a dual tone (1 for each channel ) click-per-event audio

**STATUS INDICATORS:** Backlit indicators for

*QC-Daily QC check needed*

*OL-Scintillation detector is in overload condition*

*CPM/DPM-Counting in CPM or DPM mode*

*aAL/bAL-Count has exceeded alarm setpoint*

**SCALERS:** 2 ea. 6 digit LCD displays with backlights providing a range of 0 - 999999 counts (started by COUNT button)

**SCALER LINEARITY:** Reading within  $\pm 2\%$  of true value

**COUNT TIMER:** Adjustable from 0.1 - 30 minutes (PC setting is user-defined via PC software)

**HIGH VOLTAGE:** Adjustable from 200 - 2500 volts

**THRESHOLD:** BETA - 4mV

ALPHA - 120 mV

**BETA WINDOW:** 50mV

**DATA-OUTPUT:** 9 pin RS-232 port

**POWER:** 85 - 265 VAC, 50-60 Hz single phase (less than 100 mA) with battery backup

**CONSTRUCTION:** Beige polyurethane enamel paint and sub-surface printed front panel

**TEMPERATURE RANGE:** -20°C to 50°C

**ELECTRONICS ONLY**

## Model 3030E with Model 43-10-9

### Introduction

This system joins Ludlum's Model 3030E dual channel scaler with its Model 43-10-9 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 up to eight hours. A wide-range high-voltage power supply supports virtually any detector. Status indicators located along the front panel inform the operator when another QC check is required, if the detector is non-functional, if it's operating in DPM or CPM mode, and if either an alpha or beta alarm setpoint has been exceeded.



### Specifications

TUBE: 5.1 cm (2 in.) diameter magnetically shielded photomultiplier

WINDOW: 0.4 mg/cm<sup>2</sup> aluminized Mylar

ACTIVE and OPEN AREA: 20.3 cm<sup>2</sup>

SAMPLE HOLDER: aluminium housing with sample tray capable of holding up to a 60mm diameter sample

EFFICIENCY(4π):

alpha: 32%<sup>-230</sup>Th; 39%<sup>-238</sup>U; 37%<sup>-239</sup>Pu

beta: 5%<sup>-14</sup>C; 27%<sup>-99</sup>Tc; 29%<sup>-137</sup>Cs; 26%<sup>-90</sup>Sr/<sup>90</sup>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 (100 uSv/hr)

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)

COUNTER HEAD:

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)