

# Model 2929 with Model 43-10-1 Alpha/Beta Sample Counter



Ludlum Measurements, Inc.

## Features

- Dual Channel Alpha Beta Sample Counter
- Independent Readouts
- 0.1 to 990 Minutes Scaler Range
- Independent RS-232 Outputs
- Accommodates up to 5.1 cm (2 in.) Diameter Samples



## Introduction

This instrument combines Ludlum's Model 2929 Dual Channel Scaler with its Model 43-10-1 Sample Counting Head to create an alpha/beta sample counter. The Model 2929 is a dual-channel scaler incorporating a pulse height analyzer that provides alpha beta separation and displays the counts for each on dedicated six-digit LED readouts. Each readout is accompanied by an audio volume rotary control. The high voltage is set via a fine 10-turn dial with the readout given on an analog meter. The scaler count time is set by a combination of thumbwheel and multiplier controls that allow setting the time from 0.1 to 990 minutes. The front panel additionally provides

a start-count button, halt-count button, and an on/off power switch. A red count lamp is illuminated any time the instrument is performing a timed count. Independent RS-232 serial outputs are supplied for the alpha and beta channels on the back panel for supplying data to either a printer or PC. The Model 43-10-1 sample counting head is a scintillator/zinc sulfide phoswich with a sample tray accommodating up to a 5.1 cm (2 in.) diameter filter or planchet. The system comes complete with interconnecting cable and with the detector/sample tray joined to the scaler instrument to facilitate portability.

## Specifications

Part Number: 48-1245

**INDICATED USE:** alpha beta sample counting

**DETECTOR TYPE:** scintillator: ZnS (Ag) adhered to plastic scintillation disk

**EFFICIENCY:** 37% for <sup>239</sup>Pu; 32% for <sup>230</sup>Th; 39% for <sup>238</sup>U; 5% for <sup>14</sup>C; 27% for <sup>99</sup>Tc; 29% for <sup>137</sup>Cs; 26% for <sup>90</sup>Sr/<sup>90</sup>Y

**PHOTOMULTIPLIER TUBE:** 5.1 cm (2 in.) diameter, 10-pin dynode structure

**WINDOW:** 0.4 mg/cm<sup>2</sup>

**OPERATING VOLTAGE:** 500 to 1200 volts

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

**THRESHOLDS:** beta: 4 mV; alpha: 175 mV

**BETA WINDOW:** 50 mV

**SCALERS:** 2 ea. 6-digit LED displays with a range of 0-999999 counts

**SCALER LINEARITY:** reading within 2% of true value

**BACKGROUND:** 3 cpm or less for alpha; 80 cpm for beta

**TIMER:** thumb-wheel adjustment from 0-99 minutes with selectable multipliers of x0.1, x1, x10, or EXT for manual timing

**DATA-OUTPUT:** two 15-pin connectors allowing for recorder and printers (one for alpha, one for beta)

**AUDIO:** built-in unimorph type speakers with volume controls provide a dual tone (1 per channel) click-per-event audio

**AMP OUT:** "BNC" connector provides amplified detector pulse

**METER DIAL:** 0 to 2.5 kV

**METER:** 6.4 cm (2.5 in.) arc, 1 mA movement analog type

**POWER:** 95 to 250 VAC wall transformer with 24 VDC output, 50 - 60 Hz single phase (typically less than 100 mA)

**SAMPLE HOLDER:** brass housing with nickel plated brass 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

**SIZE:** Model 2929 - 24.4 x 37.1 x 25.1 cm (9.6 x 14.6 x 9.9 in.) (H x W x D)

Model - 43-10-1 23.6 x 11.4 x 23.6 cm (9.3 x 4.5 x 9.3 in.) (H x W x L)

**WEIGHT:** Model 2929 - 5.5 kg (12.1 lb) including detector

Model 43-10-1 - 1.9 kg (4.1 lb)

**Options:** Sample Planchets: Aluminum (Model L-7525-371) or Stainless Steel (Model L-7525-371-01), 5.1 cm (2.0 in.) x 3.2 mm (0.125 in.) sample planchets sized to fit Ludlum Measurements, Inc. sample counters. Minimum order size is 500 pieces.

Ludlum Measurements, Inc. P.O. Box 810, Sweetwater, Texas 79556

Web: <http://www.ludlums.com> Tel: 800-622-0828 / 325-235-5494 / Fax: 325-235-4672 / Email: [sales@ludlums.com](mailto:sales@ludlums.com)

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

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