

# Model 3030

## Alpha/Beta Sample Counter



Ludlum Measurements, Inc.

### Specifications

Part Number: 48-3204

**INDICATED USE:** simultaneous alpha beta sample counting

**DETECTOR:** ZnS(Ag) adhered to plastic scintillation material

**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>

#### EFFICIENCY(4 $\pi$ ):

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

beta: 8% 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

#### CROSS TALK:

alpha to beta: 10% or less

beta to alpha: 1% or less

#### BACKGROUND:

alpha: 3 cpm or less

beta gamma: typically 50 cpm or less (10  $\mu$ R/hr field)

**AUDIO:** built in unimorph-type speaker with volume

control to provide a dual tone click-per-event audio

#### STATUS INDICATORS:

backlit indicators for daily QC check needed (QC)

overload condition (OL)

counting in cpm or dpm mode (CPM/DPM)

count has exceeded alpha alarm set point ( $\alpha$ AL)

count has exceeded beta alarm set point ( $\beta$ AL)

**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; Shielding thickness: 19 mm (0.750 in.)

**SCALERS:** two each six-digit LCD displays with backlights providing a range of 0–999999 counts

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

**COUNT TIMER SETTINGS:** 0.1, 0.5, 1, 2, 5, 10, 60 minutes or the user-defined PC setting defined during setup using the RS-232 port. User-defined count time may be set from 0.1 to 546.1 minutes.

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

**THRESHOLDS:** alpha: -120 mV; beta: -4 mV; beta window: -50 mV

**DATA OUTPUT:** 9-pin RS-232 port for connection to PC for data download and adjustment of setup parameters. A one meter RS-232 to USB adapter cable is included. PC interface software is available for download on our website.

**POWER:** 250 watts at 95–250 Vac, 50–60 Hz single phase; internal 12 Vdc, 1.2A/hr, trickle- charged battery will provides power up to eight hours

**CONSTRUCTION:** aluminum housing with gray powder coat paint and sub-surface printed front panel

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

**SIZE:** 29.2 x 19.1 x 26.7 cm (11.5 x 7.5 x 10.5 in.) (H x W x D)

**WEIGHT:** approximately 13.2 kg (29 lb)

**SOFTWARE:** computer 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.

**OPTION:** Ludlum Measurements has sample planchets available. Stainless Steel (PN 7525-371-01) and Aluminum (PN 7525-371) planchets, 5.1 cm (2.0 in.) diameter, 3.2 mm (0.125 in.) thickness may be purchased in quantities of not less than 500.



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.

Nov 2018