

Model 3030 Alpha/Beta Sample Counter

Radiation Detection for a Safer World



Ludlum Measurements, Inc.

Specifications

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/cm² aluminized Mylar

ACTIVE and OPEN AREA: 20.3 cm²

EFFICIENCY(4π):

alpha: 32% for ²³⁰Th; 39% for ²³⁸U; 37% for ²³⁹Pu

beta: 8% for ¹⁴C; 27% for ⁹⁹Tc; 29% for ¹³⁷Cs; 26% for ⁹⁰Sr/⁹⁰Y

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 μR/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 (αAL)

count has exceeded beta alarm set point (βAL)

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

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

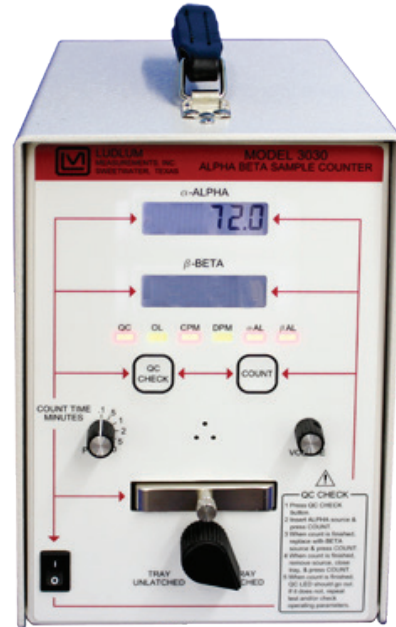
TEMPERATURE RANGE: -20 to 50 °C (-4 to 122 °F)

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.



Part Number: 48-3204