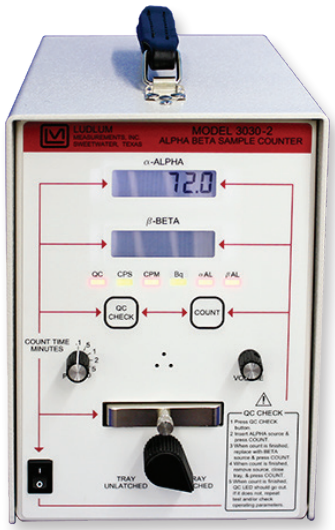
LUDLUM MEASUREMENTS, INC.

Model 3030-2
Simultaneous Alpha/Beta Counter



Introduction

The Model 3030-2 is a dual-counter version of the Model 3030 designed for simultaneous alpha and beta sample measurements. The instrument allows the count to be displayed in units of counts per minute (CPM), Becquerel (Bq), or counts per second (CPS). In order to do this, the status light for overload (OL) is changed to a green indicator, and the overload condition is instead displayed as "OL" on both LCD displays. The final change is that, when placed into Bq or CPS units, the alpha and beta LCD displays are changed to having a 2nd decimal place, ie. in the format xxxx.xx, to allow for lower level measurements.

Specifications

Part Number: 48-3992

INDICATED USE: dual-channel simultaneous alpha beta sample measurement
DETECTOR: ZnS(Ag) adhered to plastic scintillation material
TUBE: 5.1 cm (2 in.) diameter magnetically shielded photomultiplier
CONNECTOR: series "C" for connection to an external counter
WINDOW: 0.4 mg/cm^2 metalized polyester
ACTIVE and OPEN AREA: 20.3 cm^2
EFFICIENCY (4π):
alpha: ^{230}Th - 32%; ^{238}U - 39%; ^{239}Pu - 37%
beta: ^{14}C - 8%; ^{99}Tc - 27%; ^{137}Cs - 29%; ^{90}Sr/^{90}Y - 26%
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: dual tone (one for each channel), "click-per-event" type with volume control
STATUS INDICATORS:
- (QC) backlit indicators for QC-daily check needed
- (OL) overload condition LCD will toggle between current reading and OL on both alpha and beta displays
- counting in Becquerel (Bq) or counts per second (CPS)
- count has exceeded alpha alarm set point (αAL)
- count has exceeded beta alarm set point (βAL)

AUDIO: dual tone (one for each channel), "click-per-event" type with volume control
SAMPLE HOLDER: brass housing with chrome-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
SCALERS: two each (one per channel), 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 W at 95–250 Vac, 50–60 Hz single phase; internal 12 Vdc, 1.2 A/hr, trickle- charged battery provides power up to eight hours
CONSTRUCTION: aluminum housing with gray powder-coat paint and sub-surface printed membrane front panel
TEMPERATURE RANGE: -20 to 50 °C (-4 to 122 °F)
SIZE: 27 x 18.5 x 26.7 cm (10.2 x 7.3 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. (PN 1370-043)

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