

Model 2100 Conveyorized Sample Counter

Features

- Fully Automated Operation
- High Sensitivity Gamma Detector
- Separate High & Low Gamma Energy Sampling
- User-Adjustable Parameters
- Color LCD Touch Screen
- Ethernet Connectivity
- Remote Alarm Output
- USB Ports for ID Input Devices

Introduction

The Model 2100 automated sample counting system processes sample steel slugs to determine whether any radioactive impurities exist. The gamma radiation counting system is a table-mounted, fully integrated design that includes a gamma detector, sample conveyor, and controller to facilitate automated processing.

Once the sample has been positioned on the conveyor, an infrared sensor automatically initiates conveyance of the sample into the lead shielded detector where it is counted for a predetermined time. Once the count is completed, the conveyor again advances until the sample drops into a discard container.

The counting electronics incorporates two channels to distinguish between low and high energy gamma isotopes. All parameters, such as alarm point and count time are user-adjustable from the front panel LCD touch screen via a simple menu selection.

Measurement results for each sample are displayed on the backlit LCD. An Ethernet port reports all results and system status in real time for remote data logging and alarm annunciation. Visual and audible alarms are annunciated via the system's LCD and rear panel mounted buzzer respectively. A built-in relay provides a method for driving an external horn/strobe (available as an option). Ludlum also offers an optional Ethernet-based Model 272E remote display for conveniently displaying of one or more sample counters.

One rear panel mounted USB port enables connection to either a keyboard or barcode reader device for the purpose of entering sample ID's.



Side View



Rear View

Radiological Setup

Radiological Setup - Mode 1

Mode Settings Background Alarms Calculations

Counting Mode

- Mode 1 - Max Sensitivity
- Mode 2 - Fixed MDA
- Mode 3 - Minimum Count Time

Fast Alarm/Clean

- Fast Alarm Enabled
- Fast Clean Enabled

Minimum Count Time (secs) 5

Background Update

Count Time (sec) 60

Sigma Limit 6

Sigma OK 3

Individual Alarms

- Enabled
- Disabled - Sum Channel Only

Units of Measure

Activity Bq Count Rate cps

OK Cancel Apply

Radiological Setup - Mode 1

Mode Settings Background Alarms Calculations

Max MDA (Bq) 675

Maximum MDA 675

High Alarm Activity Level (Bq) 1,667

Count Time (secs) 10

Detection Probability % 95.00

Composite Sigma Coefficient (K sub S+B) 1.65

False Alarm Probability % 0.100

Sample Slag

OK Cancel Apply

Setup screens allow configuring the instrument to best suit each particular sites criteria. Three different counting modes are offered to either

- Maximize the sensitivity
- Fix the MDA (Minimum Detectable Activity)
- Automatically adjust counting cycles to the minimum count time possible

Other parameters facilitate configuring alarms, background updates, units of measurements etc.

Specifications

Part Number: 48-3780

DETECTOR: 5.1 x 5.1 cm (2 x 2 in.) NaI (sodium iodide)

ENERGY RESPONSE: 30 keV to 3 MeV

SENSITIVITY: 0.1 Bq/g in less than three minutes (standard 100 gram sample) (^{60}Co)

LEAD SHIELDING: internal lead shielding of 3.8 cm (1.5 in.) surrounds the detector chamber

CONVEYOR: 1/30 hp motor-driven 5.1 cm (2 in.) wide belt, automatically activated by infrared sensors

AUDIBLE BUZZER: 68 dB at 61 cm (2 ft)

POWER: 95-150 VAC, 50/60 Hz, 120 W

SIZE: 36.8 x 48 x 27.7 cm (14.5 x 18.9 x 10.9 in.) (H x W x D) (Height does not include display)

WEIGHT: 24.9 kg (55 lb)

Options

Model 272E

Remote Display Monitor provides current status of the Model 2100 series instrument via Ethernet connection. The Model 272E has a 1/4 VGA LCD and audio alarm. (Part Number 4396-1081)

Calibration Source

Calibrated 0.1 Bq/g (10 Bq) simulated ^{60}Co radiation source (Part Number 2433-504)



Alternate Instrument

Model 2100-1

Identical to the Model 2100, but utilizes a manually operated sample drawer instead of motor-driven conveyor belt. (Part Number 48-3781)

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