Model 54A
Small Article Monitor

Features

- True 4π Counting Geometry for Optimized Homogenous Efficiency
- QPASS Counting Technology for Shorter Counting Cycles
- Color LCD with Touch Screen Interface
- USB Port for Printer-Free Operation & Calibration
- User-Selectable Operating Modes
- Auto Calibration Routine
- Several Configurations Available

Part Number: 48-3792

Introduction

Automated, routine contamination frisker type instruments like Ludlum's Small Article Monitor is a well-proven methodology for ensuring that items leaving controlled areas are clean. Ludlum's new Model 54A is a smaller version of the Model 54 and incorporates identical field-proven algorithms and features. The 1.6 ft³ volume of the 54A offers greater convenience for monitoring smaller articles.

Central to the design is the detector chamber, which is configured to deliver an optimized detection volume for articles that fit within the chamber. Thick 5 cm (2 in.) plastic scintillator detectors are specially designed and arranged to optimize the sensitivity throughout the chamber. A stainless steel liner protects the detectors while facilitating decontamination. The chamber can be configured with either four or six detectors, and either 2.5 or 5.1 cm (1 or 2 in.) of lead. The lead is shipped separately and easily loaded on site.

The Model 54A is equipped with a single door, which can be mounted with either a left- or right-hand swing. Hardened steel door hinges, securely bolted to the instrument frame, employ ball-bearings to make operating the doors as easy as possible. Very powerful, non-jamming, electromagnet-activated door locks are employed to keep the door shut until the count is completed or an alarm cleared depending upon the setup.

Ludlum's new QPASS algorithms provide a means whereby administrators can optimize the settings best suited for their operations. QPASS additionally surpasses all other technologies via built-in intelligence that can automatically optimize settings as the count begins to deliver the most efficient and effective count possible. It's a perfect balance between minimum count time and maximum sensitivity that affords eliminating a second count to verify any alarms.

Operational status and instrument condition is clearly presented to the operator via a large 17.8 cm (7 in.) touch screen LCD. The software displays are designed to be very intuitive and are accompanied by a large-size pushbutton to activate sample counting, and two smaller pushbuttons for updating the background or acknowledging any alarms. The main counting screen is locked, with password control access via the touch screen, to either routine check functions at one level or a second level accessing all parameters.

The electronics support the latest Ludlum detector boards, which are connected to a PC-based fan-less embedded computer running on Embedded Windows™ XP platform. The system also provides an ethernet port that enables connection to the site LAN for collecting all count and alarm data as well as monitoring all activities remotely from one or more locations.

When taken in total, Ludlum's Model 54A Small Article Monitor delivers state-of-the-art technology in a robust design with enhanced performance, user-friendliness, and connectivity at the lowest cost on the market.

Ludlum Measurements, Inc.

Model 54A
Small Article Monitor

CHAMBER:
- INTERNAL DIMENSIONS: 35.6 x 35.6 x 35.6 cm (14 x 14 x 14 in.) (H x W x L)
- DETECTION VOLUME: 45 L (1.6 ft^3)
- LINER MATERIAL: stainless steel

DETECTORS:
- 4 or 6 detector configurations available
- Scintillator: EJ-200 plastic
- Size: 33 x 33 x 5.1 cm (13 x 13 x 2 in.)

DOOR:
- Reversible door swing
- Hinges are heavy-duty rated, incorporating ball bearings for smooth operation
- Door locks to control door operation

ELECTRONICS:
- PC based, fanless controller motherboard running Embedded Windows™ XP
- Display: 17.8 cm (7.0 in.) (diagonal) TFT LCD, SVGA, touchscreen
- User Pushbutton Controls: Start/Stop Count, Background Update, Alarm Acknowledgment. All other control functions are available via the LCD touch screen. Password protection employed.

I/O: Alarm & access control relays, USB ports, TCP/IP

COUNTING:
- Three alarm modes to maximize throughput, sensitivity or fix the count time
- Alarms available for sum channels, sum zones and individual detectors
- Automatic background updating
- Contaminated detector checking
- False alarm control
- Logs each use, operational test, and calibration

PERFORMANCE: detects 2.2 nCi mixed ^{60}Co/^{137}Cs source in less than 5 seconds

TEMPERATURE RANGE: 0–50 °C (32–122 °F)

MAXIMUM HUMIDITY: 95% non-condensing

POWER: 100–240 Vac, 50–60 Hz single phase

SIZE: 94 x 68.6 x 80 cm (37 x 27.0 x 31.5 in.) (H x W x D)

WEIGHT:
0 cm (0 in.) of lead: approximately 318 kg (700 lb)
2.5 cm (1 in.) of lead: approximately 771 kg (1700 lb)
5.1 cm (2 in.) of lead: approximately 1247 kg (2750 lb)
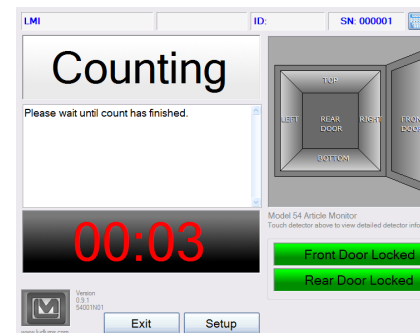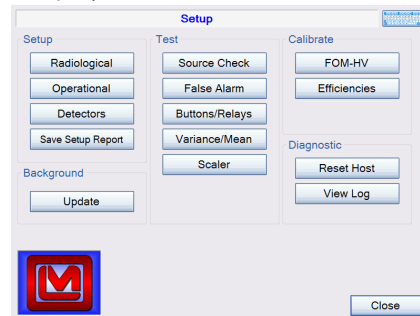*(Lead is shipped separately and installed on site)*

Available Configurations

Model	Part Number	Description
54A	48-3792	6 detectors, 5.1 cm (2 in.) lead shielding
54A-1	48-3793	6 detectors, 2.5 cm (1 in.) lead shielding
54A-4	48-3802	4 detectors, 5.1 cm (2 in.) lead shielding
54A-4-1	48-3803	4 detectors, 2.5 cm (1 in.) lead shielding

Options

Part Number	Description
4540-209	Light Stack

Also Available: Model 54 larger-capacity monitor with nearly identical specifications (PN 48-3263)

Representative Screen Shots

Ludlum Measurements, Inc.