

PACKAGE RADIATION MONITORING SYSTEM

Model # PIM-23A

包裹辐射监测系统

Model # PIM-23A

FEATURES: 特点

- AUTOMATIC CONVEYOR FOR PACKAGES
- 自动传送包裹
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- AUTOMATICALLY SEPARATES ITEMS ONTO ``CLEAN" AND ``RADIOACTIVE/CONTAMINATED" BELTS OR CHUTES
- 自动分离物件到“干净”和“辐射/污染”传送带上或斜槽内
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- RADIATION TRIGGER POINT IS CONTINUOUSLY ADJUSTABLE
- 辐射 触发点可连续调整
-
- MANUAL OVERRIDE
- 手动控制操作
-
- FIVE ENERGY (REGIONS OF INTEREST) WINDOWS
- 5个能量窗



PIM-23A

SYSTEM DESCRIPTION: Model PIM-23A Package Radiation Monitor is a sturdy, dependable, long life mechanical system with advanced electronics.

系统描述: 型号 PIM-23A 包裹辐射监测器是一款结实可靠寿命长的带先进电子学的机械系统。

Model PIM-23A is suitable for use in all package handling situations.

型号 PIM-23A 适用于各种处理行李包裹情况。

The detector is a 3" x 3" NaI Scintillator (**Optional** 5" or 7" diameter) and with its own electronics it gives great sensitivity.

Packages are physically sorted by the second



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conveyor onto "CLEAN" or "RADIOACTIVE/CONTAMINATED" belts or chutes.

探头 3" x 3" NaI 闪烁体（可选直径 5" 或 7"）带自己电子学，给出很好的灵敏度，包裹被第二传输器传到“干净”或“辐射/污染”带或斜槽。

Numerical measurement results are saved to the 60 Gig hard drive and are easily accessible for all packages: clean and radioactive.

数字测量结果储存在 60G 硬盘中，容易获取包裹“干净”和“辐射”信息

Color LCD computer monitor shows measurement values from all 5 Energy Isotopes. Indicating lights show status or step of operation and background. Ready to Count, New Package Moving into Position, Count in Progress, Count OK-CLEAN, or Count ALARM-RADIOACTIVE, ETC. The date, time and results of each package measured in that batch, that day, that week and that year are available for display, print-out and safe storage. Statistical reports are also created.

彩色 LCD 电脑显示屏显示 5 种能量窗测量值。指示灯表明状态或操作步骤和本底。准备计数，新包裹送到“位置”，计数进行中，OK-CLEAN 或 ALARM-RADIOACTIVE 等，可以显示、打印及安全存储那一批，那天那周那年的日期，时间和每个包裹测量结果。统计报告也会完成。

Automatic Mode is very similar to batch mode, but in Automatic Mode the packages are checked automatically, all day, or until there are no more packages to check. The test parameters can be changed in automatic mode, at the beginning of the day, or by activating the manual override.

自动模式和批模式非常相似，但是在自动模式中包裹自动全天检测直到所有包裹检测完毕。检测参数在一天开始时可变为自动模式，或启动手动操作。

Accessories: One set of calibration sources is supplied with PIM-23A Package Monitor. This consists of one each Ba-133, Cs-137, Co-60 calibration source standards. Each Source comes with NIST Traceable calibration certificate, test data, and Calibration Factors.

配件：PIM-23A 包裹监测器配备一套校准源，包括 Ba-133, Cs-137, Co-60 标准校准源每种一个。每种源带有 NIST 可追踪校准证书，测试数据和校准系数。

SPECIFICATIONS: 规格

- **Conveyors:** Packages pass beside the detector, then packages are physically sorted onto "RADIOACTIVE/CONTAMINATED" Belt and "CLEAN " Belt or chutes.
- **传送器:** 包裹经过探测器旁，然后被分离到“辐射污染”传送带或“干净”传送带或斜槽内。
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- **Detector:**
- 探头
Spectroscopic Grade 3" x 3" NaI Scintillation Detector.
(Optional 5" or 7" diameter)
- 色谱纯 3" x 3" NaI 闪烁探头 (可选直径 5" 或 7")
-
- **Ultimate Sensitivity:** 7 μ R/hr above background in 1 second.
- 极限灵敏: 本底以上 1 秒 7 μ R/hr。
- **Background:** Automatically subtracted.
- 本底: 自动扣除
-
- **Shielding:** 2 cm lead over greater than 2Pi. Lead shield is modular and easy to assemble (no piece over 65lbs.)
- 屏蔽: 2cm 铅优于 2 π , 铅屏为模块, 易于组装 (单块不超过 65lbs)
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- **Electronics:** The Scintillation Detector has its own PM tube. PMT base (dynode string circuit) Independent Modular high voltage and pre-amp discriminator. This provides improved sensitivity and easier maintenance if a PM tube is replaced.
- 电子学: 闪烁探头有自己 PM 管, PMT 底座, 独立模块高压和前置放大器鉴别器, 灵敏度得以改进, PM 管容易更换。
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- **Alarms:** Alarm threshold is continuously adjustable for each energy channel/Regions of Interest. High level alarm is user settable. Alarms are audio and visual plus screen display.
- 报警: 报警限值可根据每个能量到道/兴趣区连续调整, 高报警值用户设定。视听报警外加屏幕显示。
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- **Operation:** Selectable: Continuous Mode, Calibration Mode
- 操作: 可选: 连续工作模式, 校准模式
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- **Computer System:** Pentium IV 1 Giga Hz. High Resolution Graphics Display 1024 x 768, 256 colors. Color LCD screen monitor on a movable arm for improved ergonomics.
- 计算机系统: 奔腾 IV 1G Hz, 高分辨率 1024 x 768, 256 色, 彩色 LCD 显示屏带改进了符合人体工程学的可活动臂
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- **Record Keeping:** All data automatically stored on 60 Gig hard drive. Data can be transmitted to other PC's by built in Ethernet connection (**Optional:** Telephone Modem). Graphics printer included. User can print tabular or graphical records of current day, week, month or year.
- 记录保存: 所有数据储存在 60G 硬盘中, 数据可通过以太网 (可选: 电话解调器) 传送到其它 PC 机, 包括图谱打印机。用户可打印当天, 周, 月或年的表格或图形记录。
-
- **Conveyor Speed:** Continuously variable, user controlled. 150 mm/sec typical.



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- **传送速度:** 连续变化, 用户控制, 典型 150 mm/sec
-
- **Useful Width:** 24" (610mm).
- **有用宽度:** 24" (610mm).
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- **System Weight:** 175 Kg plus Shielding.
- **系统重量:** 175Kg, 加屏蔽
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- **Conveyor System:** 2 each conveyors. Belt #1 is 6 ft. long, (typical) belt carries packages beside detector. Belt #2 is 4 ft. long, (typical) reversible direction conveyor, drops CLEAN packages to one side and drops off RADIOACTIVE/CONTAMINATED packages on the other side.
- **传输系统:** 2 个传送带, #1 传输带长 6 英尺, (典型) 带子运送包裹从探头旁经过。#2 传输带长 4 英尺 (典型) 可逆方向运行, 将 “干净” 包裹抛到一侧, “辐射/污染” 包裹抛到另一侧。
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- **Optional:** Additional conveyors to carry away ``CLEAN" & ``RADIOACTIVE" Packages.
- **选购:** 额外传送带运走 “干净” 和 “辐射” 包裹
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- **Environmental Conditions:** 45°F to 100°F, (8° to 38°C) 10% to 95% relative humidity, non-condensing.
- **环境条件:** 45°F - 100°F, (8° - 38°C) 10% - 95% 相对湿度, 无冷凝。
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- **Power Supply:** 100 - 120 V AC or 220 V 50/60 Hz with UPS.
- **电源:** 100 - 120 V AC 或 220 V 50/60 Hz 带 UPS 电源。
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- **Battery Backup:** Uninterruptable "UPS" battery backup is supplied.
- **备用电池:** 提供不间断 UPS 备用电池
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- **Energy Window:** Continuously adjustable for each energy window.
- **能量窗:** 每个能量窗可连续调整
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- **Data Analysis:** First individual channels and then combined channels. Noise rejection Background subtraction Energy Analysis Calibration and units conversion Statistical significance check. Alarm point trip level.
- **数据分析:** 首先单道, 然后联合道。噪音抑制本底扣除能量分析校准和单位转换统计意义检查, 报警点触发值。
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- **Open Source:** All Technical Associates generated software is provided with source code to users.
- **开放源码:** 所有 TA 开发的软件提供源码供用户使用。
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- **Software Environment:** Technical Associates utilizes "Labtech notebook" software which allows user to make changes in system operation without being a programmer.



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- **软件环境:** TA 使用 Labtech notebook 软件, 允许用户不用成为程序员也能对系统操作做出改变。
- **Electronic Functions:** 电子学功能
 - Photo multiplier tube and base, Detector HV bias.
 - 光电倍增管和基座, 探头 HV 偏置
 - Amplifier with 5 adjustable Energy Windows (Regions of Interest).
 - 带 5 个可调节能量窗的放大器 (兴趣区)
 - Data sent to and acquired by PC.
 - PC 接受数据
 - Data analysis.
 - 数据分析
 - Alarm trigger.
 - 报警触发
 - Data storage.
 - 数据存储
 - Data printout.
 - 数据打印
 - Optional data transmission (Ethernet).
- 可选数据传输 (以太网)
 - Conveyor control.
 - 传送带控制
 - Conveyor status indicators.
 - 传输状态指示
- 系统电源 UPS
- **Options:** 选购
 - Additional Conveyor or Conveyor Extensions. 额外传输带或延长传输带
 - Outlet Annunciator Panel. 输出信号器控制板
 - Spare detector plus other spare parts. 备用探头加其它备用件
 - Inlet Annunciator Panel. 输入信号器控制板
 - Calibration Jig. 校准夹具
 - Accessory Control Panel. 控制板配件
 - Bar-code System. 条形码系统
 - Wider Temperature Range. 较宽温度范围
 - 5" or 7" diameter NaI Scintillation Detector. 直径 5" 或 7" NaI 闪烁探头
 - Additional Regions of Interest Energy Channels. 额外兴趣区能量道



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