PACKAGE RADIATION MONITORING SYSTEM
MODEL ~ PIM-23A & PIM-23B

FEATURES:

- AUTOMATIC DETECTOR SYSTEM FOR PACKAGE CONVEYOR
- PIM-23A ~ CAPTURES DATA & AUTOMATICALLY SORTS & SEPARATES ITEMS ONTO “CLEAN” & RADIOACTIVE/CONTAMINATED” BELTS OR CHUTES
- PIM-23B ~ CAPTURES DATA OF “CLEAN” & RADIOACTIVE/CONTAMINATED”
- RADIATION TRIGGER POINT IS CONTINUOUSLY ADJUSTABLE
- MANUAL OVERRIDE
- FIVE ENERGY WINDOWS (REGIONS OF INTEREST)
- REAL-TIME DATA ARCHIVE & RETRIEVAL
- 7 µR/HR ABOVE BACKGROUND IN 1 SECOND

DESCRIPTION:

- The PIM-23B monitors packages while they are traveling on a conveyor belt.
- Model PIM-23B Package Radiation Monitor is a sturdy, dependable, long life mechanical system with advanced electronics.
- The detector is a 3” x 3” NaI Scintillator (Optional: 5” or 7” diameter) has its own electronics to give the greatest sensitivity.
- Numerical measurement results are saved to the 60 Gig hard drive and are easily accessible for all packages: clean and radioactive.
- Color LCD computer monitor shows measurement values from all 5 Energy Isotopes.
- Indicating lights show status as “CLEAN” or “RADIOACTIVE”.
- The date, time and results of all data that day, that week and that year are available for display, printout and safe storage.
- Accessories: One set of calibration sources is supplied with PIM-23B 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.
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SPECIFICATIONS:

Conveyor PIM-23A: Packages pass beside the detector display shows status as “CLEAN” or “RADIOACTIVE/CONTAMINATED”. Packages are physically sorted onto “CLEAN” & RADIOACTIVE/CONTAMINATED” belts or chutes.

Conveyor PIM-23B: One belt. Packages pass beside the detector and display shows status as “CLEAN” or “RADIOACTIVE/CONTAMINATED”.

Conveyor System PIM-23A: 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.

Conveyor System PIM-23B: Drops CLEAN packages to one side. Drops off RADIOACTIVE/CONTAMINATED packages on the other side.

Optional: Additional conveyors to carry away “CLEAN” & “RADIOACTIVE” Packages

Conveyor Width PIM-23A & PIM-23B: 24”

Detector: Spectroscopic Grade 3” x 3” Nal Scintillation Detector. (Optional: 5” or 7” diameter)

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.

Ultimate Sensitivity: 7 R/hr above background in 1 second.

Background: Automatically subtracted.

Shielding: 2 cm lead over greater than 2. Lead shield is modular and easy to assemble (no piece over 65 lbs.)

ELECTRONICS:

Alarms: Alarm threshold is continuously adjustable for each energy channel/ROI. High level alarm is user settable. Alarms are audio and visual plus screen display.

Operation: Selectable: Continuous Mode, Calibration Mode

Computer System: 1 Terabyte. Color display.

Color LCD screen monitor on a movable arm for improved ergonomics.

Record Keeping: Real-Time Data Archive and Retrieval. Data can be transmitted to other PC’s by built in Ethernet connection (Optional: Wireless cell phone, email). Graphics printer included. Print tabular or graphical records of current day, week, month or year.

Environmental Conditions: 45°F to 100°F, (8° to 38°C) 10% to 95% relative humidity, non-condensing

Power Supply: 100 - 120 V AC or 220 V 50/60 Hz with UPS

Battery Backup: Uninterruptable "UPS" battery backup is supplied

Energy Window: Continuously adjustable for each energy window.

Data Analysis: First individual channels and then combined channels.

- Noise rejection.
- Background subtraction.
- Energy Analysis Calibration and units conversion.

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- Statistical significance check.
- Alarm point trip level

Electronic Functions:
- Photo multiplier tube and base, Detector HV bias.
- Amplifier with 5 adjustable Energy Windows (Regions of Interest).
- Data sent to and acquired by PC.
- Data analysis.
- Alarm trigger.
- Conveyor Control
- Conveyor Status Indicators
- Data storage and Print Out
- System Power, UPS Battery Back Up

Options:
- Additional Conveyor or Conveyor Extensions
- Outlet Annunciator Panel.
- Spare detector plus other spare parts.
- Inlet Annunciator Panel.
- Calibration Jig.
- Wider Temperature Range.
- 5” or 7” diameter NaI Scintillation Detector.
- Additional Regions of Interest Energy Channels.