

PACKAGE RADIATION MONITORING SYSTEM

Model # PIM-23A

FEATURES:

- AUTOMATIC CONVEYOR FOR PACKAGES
- AUTOMATICALLY SEPARATES ITEMS ONTO "CLEAN" AND "RADIOACTIVE/CONTAMINATED" BELTS OR CHUTES
- RADIATION TRIGGER POINT IS CONTINUOUSLY ADJUSTABLE
- MANUAL OVERRIDE
- FIVE ENERGY (REGIONS OF INTEREST) WINDOWS

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

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

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

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 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.

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.

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.



PIM-23A

**T
A**

TECHNICAL ASSOCIATES

7051 ETON AVENUE * CANOGA PARK, CA 91303 TELEPHONE (818) 883-7043 * FAX(818) 883-6103

www.tech-associates.com

\$Revision: 1.1 \$

PACKAGE RADIATION MONITORING SYSTEM

Model # PIM-23A

SPECIFICATIONS:

Conveyors:	Packages pass beside the detector, then packages are physically sorted onto "RADIOACTIVE/CONTAMINATED" Belt and "CLEAN " Belt or chutes.
Detector:	Spectroscopic Grade 3" x 3" Nal Scintillation Detector. (Optional 5" or 7" diameter)
Ultimate Sensitivity:	7 μ R/hr above background in 1 second.
Background:	Automatically subtracted.
Shielding:	2 cm lead over greater than 2 π . Lead shield is modular and easy to assemble (no piece over 65lbs.)
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.
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.
Operation:	Selectable: Continuous Mode, Calibration Mode
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.
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.
Conveyor Speed:	Continuously variable, user controlled. 150 mm/sec typical.
Useful Width:	24" (610mm).
System Weight:	175 Kg plus Shielding.
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. Optional: Additional conveyors to carry away "CLEAN" & "RADIOACTIVE" Packages.
Environmental Conditions:	45 ^o F to 100 ^o F, (8 ^o to 38 ^o C) 10% to 95% relative humidity, non-condensing.
Power Supply:	100 - 120 V AC or 220 V 50/60 Hz with UPS.



TECHNICAL ASSOCIATES

7051 ETON AVENUE * CANOGA PARK, CA 91303 TELEPHONE (818) 883-7043 * FAX(818) 883-6103

www.tech-associates.com

\$Revision: 1.1 \$

PACKAGE RADIATION MONITORING SYSTEM

Model # PIM-23A

SPECIFICATIONS (Continued):

- 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 Statistical significance check. Alarm point trip level.
- Open Source:** All Technical Associates generated software is provided with source code to users.
- Software Environment:** Technical Associates utilizes "Labtech notebook" software which allows user to make changes in system operation without being a programmer.
- 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.
Data storage.
Data printout.
Optional data transmission (Ethernet).
Conveyor control.
Conveyor status indicators.
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.
Accessory Control Panel.
Bar-code System.
Wider Temperature Range.
5" or 7" diameter NaI Scintillation Detector.
Additional Regions of Interest Energy Channels.



TECHNICAL ASSOCIATES

7051 ETON AVENUE * CANOGA PARK, CA 91303 TELEPHONE (818) 883-7043 * FAX(818) 883-6103

www.tech-associates.com

\$Revision: 1.1 \$