

# TSA PM700

## Pedestrian Radiation Portal Monitor



The TSA PM700 automatically scans pedestrian traffic without the need for frequent calibration. They are intended for applications where the relatively low energy emissions from  $^{235}\text{U}$  and  $^{239}\text{Pu}$  are the main concern. They are currently in use at uranium enrichment plants, weapons manufacturing plants, weapons storage sites, nuclear laboratories, nuclear waste disposal and storage sites where detection of Special Nuclear Materials (SNM) is essential.

### Advanced Design Features

The TSA PM700 monitor is a stand-alone pedestrian radiation portal monitor (RPM) with excellent sensitivity and reliability. The PM700 large detectors and unique detection algorithm improve its performance to the point that it can achieve ASTM Standard C 1169 Category III\* sensitivity for SNM. All of the essential components are contained in the pillars; radiation detectors, controller, and occupancy detector. The system operates from an internal battery. The battery is constantly charged from the site's AC line during normal operation. In the event of a power outage, the battery permits continued operation for at least 12 hours.

### Programmable Detection Parameters

Selectable settings for sensitivity, energy discrimination, and fault levels may be entered by the administrator.

### Easy-to-Operate

After the initial site preparation is completed, the system can be installed and operating in less than an hour. When the system is powered up, it acquires an initial background count typically within 20 seconds. The background count is continually updated until the system is occupied. When the monitor senses occupancy, the system starts comparing the current count with the most recent background data. Alarm comparisons are made every 200ms. If the count exceeds the alarm level, both audible and visual alarms will be triggered. The system monitors itself and indicates low and high background conditions.

### Flexible Detection Options

The TSA PM700 is available in three configurations; Gamma, Neutron or a combination of Gamma and Neutron detection. Gamma provides detection of ionizing radiation and Neutron provides detection of Special Nuclear Materials (SNM) while the combined Gamma and Neutron provides the most powerful detection capabilities for radioactive isotopes even in shielded materials.

### Interface Options

With the optional Remote Alarm Panel operators can view alarms up to 300m from the monitor. The TSA PM700 is compatible with TSA RAVEN™ communications software designed to both capture and view data and video images relating to a radiological detection incident.

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## SPECIFICATIONS

### PHYSICAL SPECIFICATIONS

Operating Configuration	Walk-through pedestrian monitor
Pillars	Master and slave pillar
Standard Pillar Spacing	35in (88.9cm)
Overhead Crossover	2 plastic conduits for power and data cables
Radiation Detectors	Four gamma radiation detectors (2/pillar)
Gamma Detector Material	Polyvinyltoluene (PVT) plastic scintillator
Gamma Detector Size	35in H x 10in W x 1.5in D (88.9cm x 25.4cm x 4cm)
Gamma Detector Volume	34.4 liters total detector volume
Pillar External Dimensions	84in H x 26in W x 8in D (203cm x 66cm x 20cm)
Pillar Weight	400 lbs (182kg)

### PERFORMANCE SPECIFICATIONS

Gamma Radiation Detection	Meets ANSI N42.35 and IEC 62244
SNM Detection	3g HEU or 0.08g Pu239 per ASTM C1169 Cat III
False Alarm Rate	Typically less than 1 in 1,000 passages

### OPERATION

Inspection Mode	Walk through
Inspection Speed	3.9ft/s (1.2m/s) nominal
Occupancy Sensors	IR and radar sensors
Radiation Alarms	Flashing light and audible alarm
Tamper/Fault Alarm	Amber light
Main Power	90-240VAC, 50-60Hz
Backup Power	Rechargeable lead acid battery for 8 hr operation
Ports	RS232, Ethernet

### ENVIRONMENT/SAFETY

Temperature	-20°C to 50°C
Humidity	5 to 95% non-condensing
Environmental Protection	IP65
Standards	CE

### OPTIONS

Optional Gamma Detectors	Larger gamma detectors for higher sensitivity
Neutron Detectors	2 B10 detectors (1/pillar)
Optional Neutron Detectors	4 He-3 detectors (2/pillar)
Overhead Neutron Detector	1 B10 or 2 He3 detector in overhead structure
Neutron Detection	Meets ANSI N42.35 and IEC 62244
SNM Detection	100g Pu239 per ASTM C1169 Cat NII
Overhead Crossover	Box structure
Optional Pillar Spacing	Different spacing for specific applications
Remote Oversight	TSA AM270 local alarm box, TSA RAVEN
Remote Access	Serial Port

### APPLICATIONS

- Aviation
- Critical Infrastructure
- Customs and Border Control
- Event Security
- Law Enforcement
- Defense

### STANDARD FEATURES

- Gamma Radiation Detection
- Standard Pillar Separation
- Overhead Conduits

### DEFINITIONS

- Gamma Detection - For the detection of ionizing radiation.
- Neutron Detection - Typically used to detect Special Nuclear Materials (SNM).
- Gamma and Neutron Detection - For full spectrum detection capabilities

### OPTIONS

- Neutron Radiation Detection
- Large Gamma Detectors
- Box Crossover
- Different Pillar Separation
- Remote Oversight
- Serial port



TSA RAVEN™ (Radiation Alarm and Video Event Notification) communications software is used remotely to assist response personnel in the field to pinpoint radioactive sources. RAVEN can monitor multiple detectors and aid in managing individual detector activity.

