

## Vehicle Portal Monitor

### *Benefits*

- Reliable operation with a low rate of false alarms.
- Simple to install and easy to use
- Uses digital electronics with reduced electrical noise
- Two detection technologies may be combined in a single monitor
- Unattended automatic operation with optional operator screen
- Applicable to indoor or harsh outdoor operation



### *Features*

- Gamma ray, or gamma ray and neutron detection
- Micro-controller based automated operation with diagnostic functions
- RS-232/Ethernet interface for controller set-up or remote monitoring
- User selectable alarm provided as visual, audio or electronic signal
- Digital detector electronics including state of the art ORTEC digiBASE
- Detection and background statistics are archived
- Operates in continuous pass through or hold and measure mode

## Description

ANTECH portal monitors are available in two basic configurations, Gamma ray measuring based on the use of sensitive plastic scintillator detectors and combined gamma ray and neutron measuring, again using sensitive plastic scintillators but combined with high-pressure He-3 detectors. The portal monitors are designed to detect radioactive materials and, with neutron detection capability, to detect the presence of plutonium by passive neutron counting. The shielded and collimated plastic scintillator detectors use low noise photo multiplier tubes, with state of the art digital detection electronics based on ORTEC digiBASE. In the case of combined technology portals, the polyethylene moderated, high-pressure He-3 detector tubes, providing enhanced neutron detection sensitivity, are connected to high-speed charge collection electronics and operate in neutron totals counting mode.

ANTECH portal monitoring technology is derived from work performed at the Los Alamos National Laboratory (LANL) and implemented in the late 1980's by Jomar Systems. Since the transfer of technology to ANTECH, extensive improvements have been added and the ANTECH portal monitoring technology represents the current state of the art. ANTECH continues to work with technology developers at Los Alamos who are engaged in a process of continuing improvement with a view to optimising the performance for Homeland Security and defence related applications.

The operation of ANTECH portal monitors is automated through the use of an onboard microprocessor controller, which performs system diagnostic testing, input monitoring and background discrimination. The controller employs algorithms based on the sequential probability ratio (SPR) test, developed originally by Fehlau and others at LANL. The portals contain all the necessary electronics, including controller, power supplies, amplification, single channel analyser and high voltage bias supplies to constitute stand alone instruments.

The Series 5123 gamma ray and the Series 5125 combined technology gamma ray and neutron Vehicle Portal Monitors are available in the standard configuration shown with vertical pillars or with additional overhead and potentially under road additional sensors for enhanced efficiency. They can operate in either continuous pass through or hold and measure mode, depending on the application and sensitivity requirement. These Vehicle Portal Monitors comply with the requirements of ASTM C1112-93 and are consistent with the performance evaluation requirements of ASTM CI 1236-93.

## Specification

- **Typical dimensions of twin pillar configuration: 4.5 to 5m separation**  
(L x W x H): 950mm x 400mm x 3020mm (each pillar)
- **Series 5123 has 4 scintillation panels**
- **Detection levels (Series 5123):**  
8 - 10 grams total Pu (military grade)  
approximately 1 kg highly enriched U