

PORTAL V Advanced Radiation Vehicle Screening System for Airport Security



PORTAL V - AIRPORT, the advanced modular radiation vehicle screening system for airport security, is specially designed for customs services, security checkpoints and cargo terminal control in airports. The system uses an industry-proven detector design, advanced mathematical algorithms and low-noise electronics. This combination of technologies provides a perfect solution for vehicle monitoring with very sensitive detection capabilities. The portal system protects sites against the illicit transportation of nuclear material.

Benefits

- Modular system (different configurations possible)
- Fully-automated screening process
- Visual and sound alarms
- Steel frame construction (anchored to a concrete base or wall-mounted)
- Range of add-on systems - speed measurement, camera system, traffic control, barriers, barcode readers, ID card readers
- Possible external data interchange using the Modbus* or internal protocol

Key Figures

50 keV – 2 MeV
 ↳ Gamma energy range

10 km/h ↳ Maximum vehicle speed

490 cps/nv
 ↳ Neutron detector sensitivity

Product Description

PORTAL V - AIRPORT is equipped with large area plastic scintillators for the efficient detection of radioactive and nuclear material placed or hidden inside trucks, cars, containers and other vehicles. The system ensures continuous monitoring of each vehicle while it passes through the detection gate. The system allows automatic start-up after a possible loss of power. The energy range covers energies from 50 keV to 2 MeV. PORTAL V - AIRPORT is designed to meet IEC 62244:2011 detection requirements.

PORTAL V - AIRPORT components:

- **Control unit:** a robust industrial box mounted on one side of the portal system incorporating PLC electronics and an industrial PC with PortIS software
- **Gamma detection panels:** plastic scintillation detectors with dimensions of 1000 x 500 x 50 mm (25L) including a photomultiplier and a four-channel counter for signal processing; with two types of covers: aluminum or PE-HD (high-density polyethylene, which has better sensitivity for 241Am)
- **Lead shielding (optional):** 10 mm thick lead plates covering the back side of gamma detection panels
- **Neutron detection panels (optional):** a 5L neutron detector based on 6LiF/ZnS:Ag technology, covered by a 30 mm polyethylene moderator, including a photomultiplier and a multichannel analyser; stored in metal housing with connection sockets
- **Frames or wall mounting kits:** for the installation of the detector units
- **Accessories: object recognition** sensor, sound alarm, beacon light, bar code reader, chip card reader, video camera, speed alarm indicator



Product Application

- Detection of illicit transportation of nuclear materials in airports
- Cargo contamination control

Specification

Power supply	230 V / 50 Hz
Detectors	By default two 25 litre plastic scintillation detectors
Gamma energy range	50 keV - 2 MeV
Recommended speed of vehicles	Less than 10 km/h
Alarms	Sound and visual (red light indicator)
Control unit	Windows*-based controller or embedded PC
Software	PortIS package for data analysis and management
Environmental protection	IP65 (all components)
Optimal detector distance	From 3000 to 4500 mm
Operating temperature	From -30 °C to +55 °C
Relative humidity	93% (non condensing)

PortIS portal management software provides:

- Signal processing from all sensors
- Analysis and evaluation of measured data
- System setting
- Automatic checking of the system status
- Management of visual and sound alarm indicators
- Traffic light control
- Entering identification data of measured objects
- Displaying measured results
- Reporting events, alarms and operational information

