

NUCLEARANCE MAX

Portal Monitoring System for Scrapyards



The detection gate is equipped with two 40 L scintillation detectors that can be used for quick and easy inspection of trucks and cars transporting scrap metal. The high sensitivity of the detection system ensures high reliability of detecting a potential source of ionizing radiation.

Benefits

- Compliant with IEC 62022:2004 standard
- Modular system – different detector configurations can be used
- Fully automated
- Ensure no radioactive source enters the premises
- Can be connected to a camera system for reading vehicle registration plates
- Additional horizontal detector

Key Figures

50 keV - 2 MeV
→ Energy range

5 MPH
→ Recommended vehicle speed

3 μ Ci
→ MDA < 3 μ Ci for Co-60

Product description

The detection system is equipped with two 40 L scintillation detectors which effectively detect radioactive material located or hidden within the cargo space of a vehicle transporting scrap metal for processing. The system ensures a continuous inspection of vehicles passing through the detection gate. In the event of detecting a source of ionising radiation, the operator can take rapid action in accordance with applicable legislation.

Components included in the standard offer:

- 2 x 40 L scintillation detectors
- Control unit with a sound and a visual alarm
- Lead shielding - 10mm thick
- Common user PC with the NuSOFT PortIS (languages included: CZ, FR, IT, SK, EN)
- Recognition sensors
- 2 x poles included

Options:

- 2x camera - license plate reading
- Additional vertical detectors
- Additional horizontal detectors

Specifications

Power supply	120V (60 Hz)
Detectors	2x40 L plastic scintillation detectors
Gamma energy range	50 keV - 2 MeV
Recommended vehicle speed	5 MPH or less
Alarms	Sound and visual (red light indicator or traffic light indicator)
Control unit	Base controller and embedded PC
Software	NuSOFT PortIS package for data analysis and portal management
Environmental protection	IP65
Panel-to-panel distance	12 ft. optimal
Operating temperature	From -22 °F to 131°F
Relative humidity	93% (non-condensing)

The minimum detectable activity (MDA)

The MDAs below are given for natural background conditions, the radioactive source moving at 5mph between the detector panels (12 ft. apart).

Radionuclide	Activity
Cs-137	12 µCi
Co-60	3 µCi
Am-241	34 µCi
Am-241 (shielded)	338 µCi

Product application

- Inspection of vehicles delivering scrap metal for processing
- Inspection of departing vehicles from scrap metal processing plants

NuSOFT PortIS

- Processing of signals from all sensors
- Analysis and development of measured data
- Management of portal gateway parameter settings
- Self-diagnostic functions of the portal gate
- Management of setting of alarms and detection limits
- Traffic management
- Display of recorded data
- Report system and passage database



NuCLEARANCE Lite

 Cost effective portal detection system for scrapyards

The NuCLEARANCE Lite is equipped with two 5L scintillation detector, designed for quick and easy inspection of vehicles transporting scrap metal. The high sensitivity of the detection system guarantees high reliability of detection of potential sources of ionizing radiation for a minimal investment.

Benefits

- Cost effective system to monitor unwanted radioactive material
- Fully automated
- Easy installation and operation

Key Figures

50 keV - 2 MeV
↳ Energy range

10 km/h
↳ Maximum vehicle speed

180 kBq
↳ MDA < 180 kBq for Cs-137

System Description

The detection system is equipped with two 5L scintillation detector, which effectively detects radioactive material located in the cargo space of the vehicle transporting scrap metal for further processing. The system guarantees continuous inspection of vehicles passing through the detection gate. If an ionizing radiation source is detected, the operator can react quickly in accordance with current legislation. The configuration of the portal parameters are set directly on the portal using a PC with operating software through the RS485 communication interface.

For remote operation of the portal, an optional PC with our NuSOFT PortIS control software is available.

Basic equipment

- 2 x 5L scintillation detector
- 1 x steel stand for detector installation
- 1 x control switchboard with USB communication interface
- Visual alarm – flashing light, audible alarm

Options

- External signaling unit with audible and visual alarm
- User PC with NuSOFT PortIS (language versions CZ, EN, FR, IT, SK) connectable through RS485 interface
- Sensors for passage detection

NuSOFT PortIS package description (optional extension)

- Management of detection system parameter settings
- Vehicle passage control
- Display of measured data
- Database of vehicle scans and measurement results

Application

- Ideal for smaller recycling sites with limited budget
- Cost effective solution to avoid any costly radioactive incident and reporting

Product Specifications

Power supply	230 V / 50 Hz
Detector	2 x 5L plastic scintillation detector
Energy range	50 keV – 2 MeV
Recommended vehicle speed	Less than 10 km /hour
Control unit	Local control unit
IP	IP65
Operating temperature	-30 to + 55°C
Operating rel. humidity	93 %
Options	
Alarm unit	Visual and sound alarm (red light)
Software	NuSOFT PortIS software package

Minimum Detectable Activities

The following Minimum Detectable Activities were calculated according to the ISO11929 and they were calculated for point source at a 1 meter distance.

Radionuclide	kBq
Am-241 MDA	650
Cs-137 MDA	180
Co-60 MDA	60