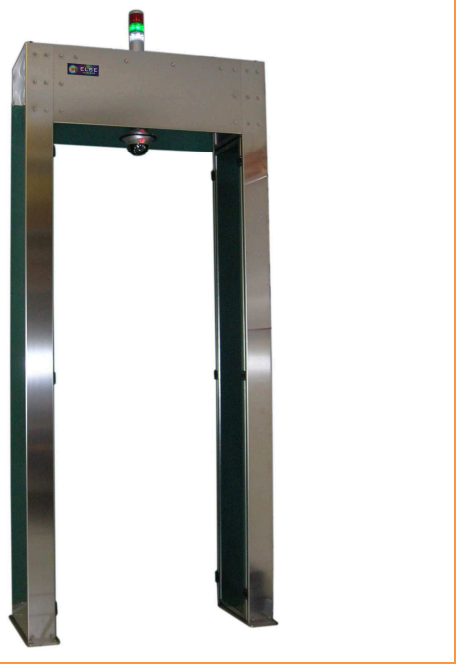
PEDESTRIAN RADIATION PORTAL MONITOR

PPM

MAIN FEATURES

- ***Sturdy and durable mechanical structure***
- ***Large, high sensitivity plastic scintillators for gamma radiation detection***
- ***Customizable and modular architecture***
- Integrated network camera for motion detection, measurement start and picture snapshots of alarm events
- Local alarm beacon
- Strengthened structure, can be fastened to the floor
- Connectable to interlock devices
- Neutron detection sub-system available



DESCRIPTION

The **PPM** pedestrian radiation portal monitor has been designed to monitor persons passing through the device for detection of smuggled radioactive sources or possible contamination. The system features a portal mechanical structure, with two columns on the sides of the measuring zone, each containing one plastic scintillator detector with a large sensitive area.

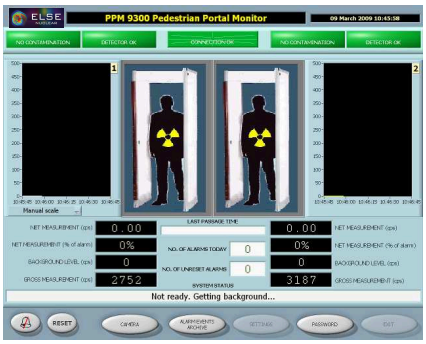
Both detectors are lead shielded in order to reduce the contribution from the environmental background radiation.

The measurement starts when the camera detects the passage of a person through the portal. The monitor measures the radioactivity level, subtracts the background contribution and compares the net result with a pre-set alarm threshold. All measured data and information about alarm and failure statuses are displayed by the software.

The background level is automatically determined by the monitor when no passage through the portal is occurring.

The acoustic-luminous beacon installed on the top of the portal indicates the status of the portal. An output is available to control external interlock devices, e.g. to forbid the passage in case of alarms.

All alarm and failure events are archived, including the event date/time, the measurement data and the current alarm threshold setting.



Software main panel

Image acquisition

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TECHNICAL SPECIFICATIONS

Measurement features

- False alarm rate: <1/10'000 (alarm threshold at 5 σ)
- Energy range: 35 keV ÷ 2 MeV
- Efficiency referred to Cs-137: 50 kcps/µGy/h (per detector)
- Minimum Detectable Activities (5 σ confidence level):
  - Cs-137: 20 kBq
  - Pu-239: 10 mg
  - Enriched-U, 93% in U-235: 300 mg
  - Natural-U: 30 g

Detection unit

- Detection: 2 plastic scintillators
- Detector dimensions (WxDxH): 28x4x198 cm
- Lead shielding thickness: 10 mm

Acquisition and power supply module

- Status management:
  - 4 relays NO/NC for the local alarm annunciator
  - 4 relays NO/NC for interlock purposes (in parallel with the above outputs)
- Detector signal sampling rate: 1 second

Weight and dimensions

- Portal dimensions (WxDxH): 104x40x225 cm
- Weight: 360 kg

ACCESSORIES AVAILABLE UPON REQUEST

1. Passage interlock device
2. Neutron detection sub-system
3. Warranty extension from 12 months to 24 months

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