AT2329 Radiation Portal Monitor

AT2329 Radiation Portal Monitor (RPM) is a modern and highly sensitive stationary system providing continuous radiation monitoring to detect gamma and neutron radiation sources inside vehicles crossing the road or rail checkpoints.

The design of RPM is based on Gamma - Neutron Measurement Units attached to posts mounted on both sides of control zone.

Smart detection units with large-volume detectors and efficient algorithms in the RPM allow fast and precise detection of radiation sources with definition of its type (categorization) as a natural or an artificial.

The RPM accompanies the detection by sound and light alarm while applied software offers continuing recording of all traffic data across the control zone including video capture.

Application

- Checkpoints
- Nuclear industry facilities
- Public utility companies for solid domestic waste disposal
- Scrap metal salvage and reprocessing facilities and smelters

Features

- ANSI N42.35 compliant
- Gamma and neutron sensitive channels
- Reliable gamma and neutron detection
- Categorization (differentiation) of radiation sources into natural and artificial
- Rear and side parts of gamma radiation detection units are shielded by lead plates
- Occupancy sensor is used to reduce false alarm period
- Sound and light alarm
- Functional self-monitoring of component parts
- Severe operating conditions
- Logging of count rate levels and cases of threshold crossing events
- PC-connectivity via RS485 or Ethernet interface to allow combination of RPMs into a single network
- Parallel operation with CCTV
- Backup power source continuous operation for not less than 8 hours

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Specification

RPM configuration *(4 x Measurement Units)*	
Measurement Unit configuration	Gamma channel: **BDRM-11** detection unit Neutron channel: **BDKN-08** detection unit
Radiation sources detection	**Meets ANSI N42.35**
Control zone	width – 6 m, height – 4 m
Inspection speed	8 km/h (2.2 m/s)
Alarm	sound and light alarm
False alarm rate	1 in 10,000 passages (standard) *Can be configurable*
Initialisation time	≤5 min
Power supply	1) Mains: 110-230 VAC, 50-60 Hz 2) Rechargeable battery for emergency power
Continuous battery operation time	≥8 h
Protection class	IP65
Operation temperature range	-30°C to +55°C (-22°F to 131°F)
Relative air humidity	≤95%
External dimensions (not more)	600x400x200 mm (Control unit) 1400x800x220 mm (Measurement Unit)
Weight (not more)	35 kg (Control unit) 300 kg (Measurement Unit)

Gamma radiation detection unit	**BDRM-11**
Detector	Scintillation plastic 1000x220x50 mm (11 liters)
Energy range	50 keV – 3 MeV
Typical sensitivity to source radiation, cps/(μSv·h^{-1})	108000 (^{241}Am) 67000 (^{137}Cs) 35000 (^{60}Co)

Neutron radiation detection unit	**BDKN-08**
Detector	He-3 proportional counter in polyethylene moderator
Energy range	0.025 eV – 14 MeV
Typical sensitivity to source radiation at the distance of 1 m, cps/(neutron·s^{-1}·cm^{-2})	125 (^{252}Cf)

Design and specifications are subject to change

ATOMTEX®
http://www.atomtex.com

5, Gikalo st.,220005 Minsk,
Republic of Belarus
Tel./fax: +375 17 2928142
E-mail: info@atomtex.com

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