BOERBOEL

METRAD DETECTOR

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Introduction

- Radioactive materials continue to move beyond regulatory and law enforcement control, either intentionally or unintentionally.

- **Intentional**: Illicit trafficking for terrorist, political purposes, or illegal profits.

- **Unintentional**: Example - transportation of steel contaminated by radiation, posing health risks.

- Governments bear responsibility for combatting these movements.

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Boerboel MetRad Detector (BMRD) Overview

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Target User Groups

- Security services: Buildings (hotels, banks), airports, stations, ports.
- Public event security.
- Protection of officials.
- Security at nuclear facilities, healthcare centers, research institutes.
- Checkpoints: Car, railway, pedestrian, customs.
- First responders in radiation accidents.

Advantages

- **Efficiency:** Double transit speed due to simultaneous scanning.
- **Safety:** Detects shielded radiation sources.
- **Personnel Load:** Reduced to one scan per object.
- **Deployment:** Rapid, cost-effective radiation monitoring.
- **Durability:** Shock-resistant, operable in varied temperatures.
- **User-friendly:** Automatic calibration, visual/audible/vibration alarms, no additional staff training required.
- **Safe Design:** Contains no radioactive material or sources of ionizing radiation.

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Technical Data

Gamma Radiation Detection:

- Detects and localizes ionizing radiation sources with a high-sensitivity scintillation detector (CsI(Tl)).

- Responds to radiation energy from 15 keV to 3000 keV within -20 to +50 °C.
o Emits distinct signals for gamma radiation exceedances.

Metal Object Detection:

- Simultaneously detects metal and radioactive materials.

- Calibrated against a stable metal background, enabling searches for shielded radiation sources in metal objects.

Basic performance data – gamma radiation channel

Detectable radiation energy range	between 0.015 and 3.0 MeV
Sensitivity to gamma radiation: meets the international safety requirements and ensures the detection of special reference radiation sources.	0.1 gram of plutonium or 3 grams of uranium at 20 ± 0.5 cm.
Operating temperature range	between -20°C and +55°C
Device response time when the threshold level is exceeded, max.	≤ 2s

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Search for metal objects:

The device provides simultaneous detection with radioactive materials at the maximum
distance between the working surface of the search element and the plane of metal object in accordance with the table.

Basic performance data – search for metal objects

Detected object	Detection range (mm)	Scan speed
Bayonet knife	150 (±10)	0.1-0.5 m/s
Steel plate 100×100×1 mm	200 (±10)	
Makarov gun	200 mm (±20)	
Container of radioactive material	200 mm (±20)	

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Handling Information

Weight (kg) 0.42	between 0.015 and 3.0 MeV
Dimensions (mm) 420x85x45	0.1 gram of plutonium or 3 grams of uranium at 20 ± 0.5 cm.
Protection class IP44	between -20°C and +55°C

Delivery Set

Description W	Quantity (pcs.)
Hand-Held Combined Metal and Gamma Radiation Detector – «PBSRadDetect» Device	1
Power supply: PP3(6F22) 9-volt battery (rechargeable or non-rechargeable)	1
Operation manual	1
Data sheet	1
Package	1
Battery charger	1

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1288 Dickenson Avenue, Pretoria, Gauteng,
South Africa, 0186

Phone number +27 12 332 1950
Mobile +27 82 563 4488
office@serpens.co.za
www.serpens.co.za