POLIMASTER®

Radiation Detection Technologies

BACKPACK RADIATION DETECTOR

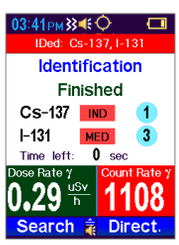
PoliPack®

PoliPack® Backpack-Based Radiation Detection System (BRD) is a highly sensitive portable radiation monitor carried in a compact backpack and controlled remotely via the wired control unit or a smartphone with the free Polismart® iOS and Android app.

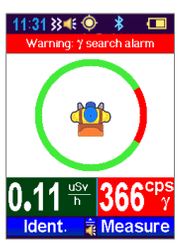
Compliant with the **ANSI N42.53-2021** and **IEC 62694:2022** requirements, the BRD is a rugged, lightweight and fast deployable device that provides prompt and reliable detection, location and identification of multiple and masked isotopes. PoliPack is ideal for covert radiation surveys in crowded areas and allows to effectively address the problems of orphaned and maliciously introduced sources.

BRD is available in 4 models: search-oriented gamma **PoliPack G** and gamma-neutron **PoliPack GN**, and spectroscopic models **PoliPack G-S** and **PoliPack GN-S** providing radionuclide identification.

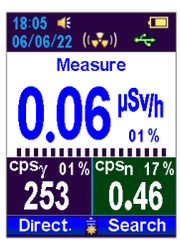
Search for γ & n radiation sources



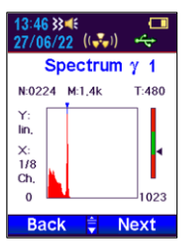
Radionuclides identification



Direction to the detected source



Dose rate monitoring



Gamma spectra accumulation

Spectra transfer via Bluetooth

Applications

- Mapping of contaminated areas
- Safety of critical infrastructure
- Public events security
- Emergency services
- Homeland security

Features

- Optional extended range detector for dose rate up to 10 Sv/h
- Remote operation with Polismart® iOS and Android app
- Long-life rechargeable battery for 72 hours of operation
- Radionuclides identification in less than 1 minute
- USB and Bluetooth communication

γ n IP67

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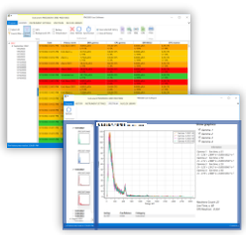
SPECIFICATIONS

Detector	gamma neutron	CsI(Tl) SiPM ^{6}LiF/ZnS
Gamma sensitivity	for ^{137}Cs for ^{241}Am	2100 cps per µSv/h 15000 cps per µSv/h
Neutron sensitivity	for ^{252}Cf in 4 cm HDPE capsule at 1.5 m	75 cps·cm^2
Energy range	gamma neutron	30 keV to 3 MeV thermal to 15 MeV
Dose rate measurement range	built-in detectors with extended range detector	0.05 µSv/h to 30 µSv/h 0.05 µSv/h to 10 Sv/h
Dose rate measurement accuracy		±30 %
Gamma radiation scintillation spectra acquisition		1024 channels

Response time	< 2 s
Alarms	visual, audible, vibration
Memory	8 hours data records, 1000 spectra, ANSI N42.42 data format
Smartphone communication	Bluetooth 4.0
PC communication	USB-C, Bluetooth
Power supply	Li-ion battery, 6400 mAh, 3.7 V
Battery life	≥ 72 h, hot swap battery
Charging time	4 h

Ingress protection		IP67, floating
Drop test		1 m
Dimensions (detection block)	G GN	360 × 235 × 85 mm 360 × 320 × 164 mm
Weight (wearable part)	G GN	≤ 6 kg ≤ 10 kg
Operating conditions		
– ambient temperature		–20 °C to 50 °C
– atmospheric pressure		84 kPa to 106.7 kPa
– relative humidity		up to 98 % at 40 °C



Desktop Software for adjusting instrument settings, downloading the operating history and analyzing the gamma spectra

Optional external connected extended range GM detector for dose rate measurement up to 10 Sv/h

Polismart® iOS and Android app for wireless BRD operation allowing to monitor the measurements in real time, record the GPS-referenced waypoints, export and transfer the records

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