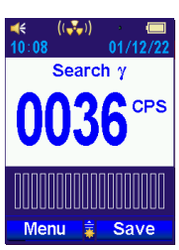
POLIMASTER®
Radiation Detection Technologies

RADIONUCLIDE IDENTIFICATION DEVICE PM1401K-3M

PM1401K-3 series of radiation monitors compromises a wide range of all-in-one devices for radiation detection, dose rate and contamination measurements, spectrometry and radionuclide identification.

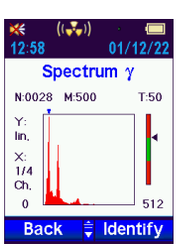
PM1401K-3M model is a **gamma-only** radiation monitor without a neutron detector which is designed for quick and reliable measurement of gamma dose rate, detection of alpha, beta, and gamma sources, measurement of alpha and beta radiation flux density, acquisition of gamma spectra, identification of radioisotopes, and measurement of food/soil contamination with ^{137}Cs.



Search for gamma radiation sources

Dose rate measurement

Radionuclides identification



Gamma spectra accumulation

^{137}Cs activity measurement

Search for αβγ radiation sources

Applications

- Customs and border control
- HAZMAT and CBRNe teams
- Emergency services
- Police and security
- Industrial facilities
- First responders

Features

- Storage of up to 10000 events and 1000 spectra
- Audible, visual and external vibration alarm
- Categorization of identified radionuclides
- Shock and water resistant IP65 case
- Adjustable radionuclide libraries
- USB communication with PC
- Built-in GPS module

γ X-RAY α β IP65

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SPECIFICATIONS

Detector		CsI(Tl); GM counter
Gamma sensitivity	for ^{137}Cs	200 cps per μSv/h
	for ^{241}Am	2000 cps per μSv/h
Energy range	gamma (search+spectroscopy)	25 keV to 3 MeV
	gamma (measurement)	15 keV to 15 MeV
Dose rate measurement range		0.1 μSv/h to 100 mSv/h
Dose rate measurement accuracy		±(15 + 0.0015 / Ḣ) %, where Ḣ is the measured dose equivalent rate value in mSv/h
Energy resolution		≤ 9 % FWHM at 0.662 MeV (^{137}Cs)
Gamma radiation scintillation spectra acquisition		1024 channels
Radionuclide library		3 extensible and editable libraries (ANSI N42.34 compliant, IND, MED, NORM, SNM categorization)
Flux density measurement range	alpha	15 to 10^5 $min^{-1}·cm^{-2}$
	beta	6 to 10^5 $min^{-1}·cm^{-2}$
^{137}Cs activity measurement range		10^2 to 10^5 Bq/kg (Bq/l)

Warm-up time	< 90 s
Memory	10000 events, 1000 spectra
Alarms	visual, audible, external vibration
Communication	USB
Power supply	2 AA alkaline or NiMH batteries
Battery lifetime (normal radiation background, active alarms and LCD backlight < 5 min/24 h)	≥ 300 h

Ingress protection	IP65
Drop test	0.7 m
Dimensions	262 × 60 × 65 mm
Weight	≤ 820 g
Operating conditions	
– ambient temperature	–20 °C to 50 °C
– atmospheric pressure	84 kPa to 106.7 kPa
– relative humidity	up to 95 % at 35 °C

Set of accessories for ^{137}Cs activity and αβ flux density measurement

PM1401K-3 Desktop Software for adjusting instrument settings, downloading the operating history and analyzing the gamma spectra

Telescopic extension pole for remote operation and surveys in hard-to-reach areas

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