



POLIMASTER®
Radiation Detection Technologies



RADIONUCLIDE IDENTIFICATION DEVICE

PM1401K-3P

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

PM1401K-3P model is the most advanced model in the series suitable for various radiation control tasks including measurement of ambient dose equivalent rate, detection of alpha, beta, gamma and neutron 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 .



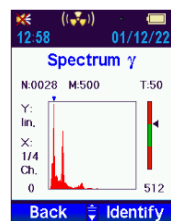
Search for γ & n radiation sources



Dose rate measurement



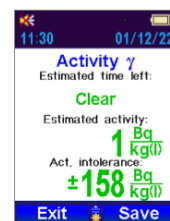
Radionuclides identification



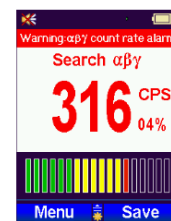
Gamma spectra accumulation



Neutrons registration



^{137}Cs activity measurement



Search for $\alpha\beta\gamma$ 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



PM1401K-3P

MULTIPURPOSE HAND-HELD RADIATION MONITOR



SPECIFICATIONS

Detector	gamma neutron	CsI(Tl); GM counter $^6\text{LiF/ZnS}$
Gamma sensitivity	for ^{137}Cs for ^{241}Am	200 cps per $\mu\text{Sv/h}$ 2000 cps per $\mu\text{Sv/h}$
Neutron sensitivity	for Pu-Be for thermal neutrons	0.13 counts $\cdot\text{cm}^2$ 4.5 counts $\cdot\text{cm}^2$
Energy range	gamma (search+spectroscopy) gamma (measurement) neutron	25 keV to 3 MeV 15 keV to 15 MeV thermal to 14 MeV
Dose rate measurement range		0.1 $\mu\text{Sv/h}$ to 100 mSv/h
Dose rate measurement accuracy		$\pm(15 + 0.0015 / \dot{H}) \%$, where \dot{H} is the measured dose equivalent rate value in mSv/h
Energy resolution		$\leq 9 \%$ 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 beta	15 to $10^5 \text{ min}^{-1}\cdot\text{cm}^{-2}$ 6 to $10^5 \text{ min}^{-1}\cdot\text{cm}^{-2}$
^{137}Cs activity measurement range		10^2 to $10^5 \text{ Bq/kg (Bq/l)}$
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)	$\geq 300 \text{ h}$
Ingress protection		IP65
Drop test		0.7 m
Dimensions		262 × 60 × 65 mm
Weight		$\leq 820 \text{ g}$
Operating conditions		<ul style="list-style-type: none"> - 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 $\alpha\beta$ 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