POLIMASTER®

Innovating Radiation Detection Technologies Since 1992

MULTIPURPOSE HANDHELD RADIATION MONITOR PM1401K-3P

PM1401K-3 is designed for detection and localization of radioactive materials by registration of photon (gamma and X-ray), alpha, beta and neutron radiation.

The device can accumulate gamma spectra, identify radioactive isotopes, measure radionuclide specific activity and photon dose equivalent rate, as well as determine level of surface contamination with alpha and beta particles.

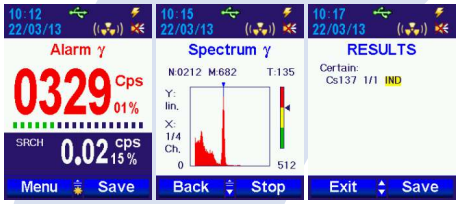
These are the smallest and the most light-weight instruments in the world which is capable to operate simultaneously as an alarming device, search instrument, survey meter, spectrometer and identifier.

Identification results appear on a bright, easily read color LCD display. Belt clip and ability to automatic mode of operation make device convenient to use.

All detectors are built into one lightweight and compact case.

Shock and water resistant case ensures IP65 class environmental protection.

PM1401K-3P is equipped with alpha, beta, gamma and neutron detectors.



ALARM

LOCATION

MEASUREMENT

IDENTIFICATION

Applications

- Customs and border control
- Radiological and isotope laboratories
- Emergency services
- First responders
- Police and security
- Various industry branches where nuclear technical units and ionizing radiation sources are used

Features

- Detect, search and locate alpha, beta, gamma, X-ray and neutron radiation sources
- Measure levels of contaminated surfaces with alpha and beta irradiating sources
- Measure precisely dose rate
- Measure radionuclide specific activity in samples
- Alert users of the presence of radiation sources via audible and vibration alarms
- Record and store more than 10 000 events and 1000 gamma spectra in its non-volatile memory
- Transmit all of the recorded data to PC via USB
- Built-in GPS
- Bright, color LCD display

USB GPS

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CE

TÜV International Certification — TÜV THÜRINGEN — TIC
Quality management system ISO 9001
• Customer focus
• Customer satisfaction
• Continuous improvement
• System/process effectiveness
ID 15 100 148764
www.tuev-thueringen.de

GAMMA SEARCH, SPECTROMETRY AND ACTIVITY CHANNEL

Detector	CsI(Tl)
Sensitivity on ^{137}Cs, no less than on ^{241}Am, no less than	200 s^{-1}/(μSv/h) or 2.0 s^{-1}/(μR/h) 200 s^{-1}/(μSv/h) or 2.0 s^{-1}/(μR/h)
Gamma radiation search energy range	0.033 - 3 MeV
Coefficient n setting range, (the number of mean square deviations of background)	1.0 – 9.9
Detection of gamma radiation sources at a distance of 0.2m (0.7 ft), velocity of 0.5 m/s (1.64 ft/s) and level of radiation background of no more than 0,25 μSv/h (25 μR/h) when the activity of the sources is	
^{133}Ba	55.0 kBq
^{137}Cs	100.0 kBq
^{60}Co	50.0 kBq
Detection of the sampling sources at a distance of 0.2m (0.7 ft), velocity of 0.5 m/s (1.64 ft/s) and level of radiation background of no more than 0,25 μSv/h (25 μR/h) when the activity of the sources is	
Pu	0.3 g
U	10 g
Measuring range of specific activity on ^{137}Cs	100 Bq/kg - 100 000 Bq/kg (Bq/l)

NEUTRON SEARCH CHANNEL

Detector	LiF/ZnS
Energy range	from thermal (0.025x10^{-6} MeV) to 14 MeV
Coefficient n setting range, (the number of mean square deviations of background)	1.0 - 9.9
Detection of the ^{252}Cf alternative source with neutron flux 1.x10^{4} s^{-1}at a distance of 1 m (3.28 ft), velocity of 0.5 m/s (1.64 ft/s) and the level of radiation background of no more than 0.25 μSv/h (25 μR/h), equivalent of plutonium	250 g

MEASURING GAMMA CHANNEL

Detector	GM-counter
Dose equivalent rate measurement range (DER)	0.1 μSv/h - 100 mSv/h (10 μR/h – 10 R/h)
Gamma radiation DER measurement energy range	0.015 - 15 MeV
Energy response relative to 0.662 MeV (^{137}Cs) in the photon radiation measuring mode, no more: -within the energy range from 0.015 up to 0.045 MeV -within the energy range from 0.045 up to 15.0 MeV	 ±40% ±30%
Accuracy of DER measurement (where $\dot{H}$ is the DER value in mSv/h)	± (15 + 0.0015/$\dot{H}$) %

MEASURING ALPHA AND BETA CHANNEL

Detector	GM-counter
Alpha-flux density measurement range	from 15 to 10^{5} $min^{-1}cm^{-2}$
The minimal detectable alpha-flux density	from 2 $min^{-1}cm^{-2}$
Accuracy error of measurement of the alpha-flux density on ^{239}Pu (where φ - the measured density of alpha-flux in $min^{-1}cm^{-2}$, A - coefficient equal to 450 $min^{-1}cm^{-2}$)	± (20 + A/φ)%
Beta-flux density measurement range	from 6.0 to 10^{5} $min^{-1}cm^{-2}$
Accuracy of measurement of beta-particles within the range on ^{90}Sr+^{90}Y (where φ - the measured density of beta-flux in $min^{-1}cm^{-2}$, A - coefficient equal to 60 $min^{-1}cm^{-2}$)	± (20 + A/φ)%

GENERAL SPECIFICATIONS

Standards compliance (designed to meet)	ANSI N42.33-2006, ANSI 42.34-2006, IEC 62327:2006, ANSI N42.42:2012
Alarms	visual (color LCD), audible, external vibration
Data transfer communication channels	USB
Battery lifetime to	300 hours
Battery	2 x AA
Protection degree	IP65
Weight, no more	820 g
Dimensions	262x60x65 mm

Design and specifications of the device can be changed without further notice.

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