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Radiation measurements for your safety

MULTIPURPOSE HAND-HELD RADIATION MONITOR / IDENTIFIER PM1401K-3 PM1401K-3M

ONE OF THE SMALLEST AND LIGHTEST HAND-HELD RADIATION MONITORS IN THE WORLD

Purpose

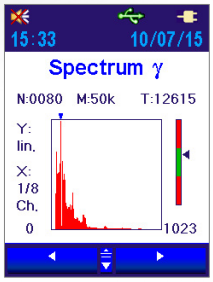
PM1401K-3 is designed for detection and localization of radioactive materials by registration of photon (gamma and X-ray), alpha, beta and neutron radiation. The device can accumulate gamma spectra, identify radioactive isotopes, measure radionuclide specific activity and photon dose equivalent rate, as well as determine level of surface contamination with alpha and beta particles.

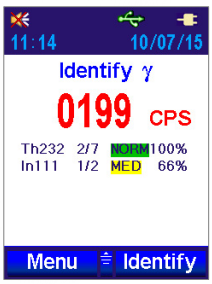
These are the smallest and the most light-weight instruments in the world which is capable to operate simultaneously as an alarming device, search instrument, survey meter, spectrometer and identifier.

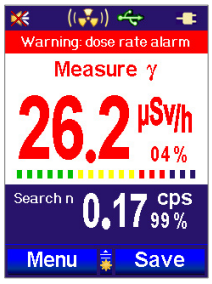
Identification results appear on a bright, easily read color LCD. Belt clip and ability to automatic mode of operation make device convenient to use.

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

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







Functions

- Detect, search and locate the radioactive and nuclear materials, by registering gamma and X-ray (photon), neutron, alpha and beta radiation
- Alert users when the preset thresholds are exceeded via audible and vibration alarms
- Measurement of the ambient dose equivalent rate of gamma and X-ray radiation
- Measurement of the surface contamination by alpha and beta sources
- Built-in radionuclide identification algorithm
- Measurement of specific or volume activity of radionuclides in samples

Application

- First responders and emergency teams
- Security and law enforcement services
- Radiation monitoring services
- Customs and border control

Features

- Accumulation and storage of up to 500 events and up to 100 gamma spectra
- Compact, lightweight and impact resistant body
- Data exchange with PC via USB interface
- Built-in GPS-module

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Specifications

GAMMA CHANNEL (search, spectrometry and activity measurement)	
Detector	CsI(Tl)
Sensitivity: • ^{137}Cs, no less than • ^{241}Am, no less than	 200 s^{-1}/(μSv/h) 200 s^{-1}/(μSv/h)
Energy range	0.033 – 3 MeV
Detection at a distance of 0.2 m when moving at a speed of 0.5 m/s and a background radiation level of not more than 0.25 μSv/h of gamma radiation sources with activity:	55.0 kBq ^{133}Ba 100.0 kBq ^{137}Cs 50.0 kBq ^{60}Co
Detection at a distance of 0.2 m when moving at a speed of 0.5 m/s and a background radiation level of not more than 0.25 μSv/h of standard samples weighing	0.3 g Pu 10 g U
Measurement range of specific (volume) activity	100 Bq/kg (Bq/l) – 100 kBq/kg (kBq/l)
GAMMA CHANNEL (measurement)	
Detector	GM tube
Dose rate measurement range	0.1 μSv/h – 100 Sv/h
Energy range	0.015 – 15 MeV
Energy dependence relative to the energy of 0.662 MeV (^{137}Cs) in the photon radiation measurement mode, not more than: • within the energy range from 0.015 to 0.045 MeV • within the energy range from 0.045 to 15.0 MeV	 ±40 % ±30 %
Dose rate measurement accuracy	± (15 + 0.0015/H) %, where H is the dose rate value in mSv/h
NEUTRON CHANNEL (search) for PM1401K-3	
Detector	He-3
Energy range of detected neutron radiation	from thermal (0.025×10 MeV) to 14 MeV
Detection at a distance of 1 m when moving at a speed of 0.5 m/s and a radiation background level of not more than 0.25 μSv/h of an alternative source of ^{252}Cf with a neutron flux of 1.5 × 10^4 s^{-1} equivalent to plutonium	250 g
Sensitivity	≥ 0.09 pulses·cm^2 – for Pu-α-Be ≥ 4.0 pulses·cm^2 – for thermal neutrons ≥ 0.6 pulses·cm^2 – for Pu-α-Be (with neutron moderator)
ALPHA AND BETA CHANNEL (measurement)	
Detector	GM tube
Alpha flux density measurement range	from 15 to 10^5 min^{-1}·cm^{-2}
Minimum detectable alpha particle flux density	from 2 min^{-1}·cm^{-2}
Alpha flux density measurement accuracy (^{239}Pu)	± (20 + A/φ) %, where φ is the measured flux density, A is a coefficient equal to 450 min^{-1}·cm^{-2}
Beta flux density measurement range	from 6,0 to 10^5 min^{-1}·cm^{-2}
Beta flux density measurement accuracy (^{90}Sr+^{90}Y)	± (20 + A/φ) %, where φ is the measured flux density, A is a coefficient equal to 60 min^{-1}·cm^{-2}
GENERAL	
Alarm types	visual (LCD), audible, vibration (external)
PC communication	USB
Positioning system	GPS
Battery lifetime	up to 300 hours
Power	2 AA batteries
Case protection	IP65
Dimensions	262 × 60 × 65 mm
Mass, no more	820 g
Standards compliance	ANSI N42.33-2006, ANSI 42.34-2006, IEC 62327:2006, ANSI N42.48 -2008, ANSI N42.42:2012

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CE

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TIC
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• Customer focus
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Design and specifications of the product can be changed without further notice.
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