



POLIMASTER[®]
Radiation Detection Technologies



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

PM1401K-3PM is designed for detection and localization of radioactive materials by registration of photon (gamma and X-ray) and neutron radiation. The device can accumulate gamma spectra, identify radioactive isotopes, measure photon dose equivalent and dose equivalent rate.

This is the smallest and the most lightweight instrument in the world which is capable to operate simultaneously as an alarming device, search instrument, spectrometer and identifier.

Bright color LCD and intuitive menu make the device easy to use.

The gamma and neutron detectors are built into a lightweight and compact case.

Shock and water resistant case ensures protection class IP65.

PM1401K-3PM is equipped with Bluetooth and GPS modules.

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

Detection, search and localization of gamma, X-ray and neutron radiation sources

Precise dose and dose rate measurement

Audible, visual and vibration alarms

Designed to comply with ANSI N42.34, IEC 62327, ANSI N42.42

Recording and storage of not less than 10 000 events and 1 000 gamma spectra

Sending the accumulated spectra to a PC via USB or Bluetooth

Built-in GPS



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Specifications

The instrument is designed to comply with the requirements of ANSI N42.34-2015, IEC 62327:2017, ANSI N42.42-2012

GAMMA SEARCH, SPECTROMETRIC CHANNEL

| | |
|--|---|
| Detector | CsI(Tl) |
| Sensitivity ¹³⁷ Cs, no less than ²⁴¹ Am, no less than ⁶⁰ Co, no less than | 400 (cps)/(μSv/h) or 4 (cps)/(μrem/h) 4000 (cps)/(μSv/h) or 40 (cps)/(μrem/h) 200 (cps)/(μSv/h) or 2 (cps)/(μrem/h) |
| Gamma radiation scintillation spectra acquisition channels | 1024 |
| Full width at half maximum (FWHM) for ¹³⁷ Cs | from 6.5 % to 8.5 % |
| Maximum quantity of scintillation spectra saved in the instrument memory | up to 1000 |
| Relative intrinsic error of transformation characteristic (integral nonlinearity) when acquiring scintillation spectra | ≤ 1.0 % |

NEUTRON SEARCH CHANNEL

| | |
|---|---|
| Detector | LiF/ZnS |
| Energy range | from thermal (0.025x10 ⁻⁶ MeV) to 14 MeV |
| Sensitivity to neutron radiation - Pu-α-Be - thermal neutrons | 0.15 cps·cm ² 5.0 cps·cm ² |

GAMMA MEASUREMENT CHANNEL

| | |
|--|--|
| Detector | GM-counter |
| Dose equivalent rate (DER) measurement range | 0.01 μSv/h - 15 mSv/h (1 μrem/h - 1.5 rem/h) |
| Accuracy of DER measurement ¹³⁷ Cs: 0.01 - 1 μSv/h (1 - 100 μrem/h) ¹³⁷ Cs: 1 μSv/h - 15 mSv/h (100 μrem/h - 1.5 rem/h) ²⁴¹ Am ⁶⁰ Co | ± 30 % ± 10 % ± 30 % ± 30 % |
| Dose equivalent (DE) indication range | 0.1 μSv - 1 Sv (10 μrem - 100 rem) |
| Energy range | 0.025 - 15 MeV |

GENERAL

| | |
|---|-------------------------------------|
| Alarms | visual, audible, external vibration |
| Data transfer communication channels | USB, Bluetooth |
| Battery lifetime | ≥ 210 h |
| Battery | 2 x AA |
| Protection degree | IP65 |
| Weight of the instrument with batteries | ≤ 0.90 kg (2 lb) |
| Dimensions | 262x60x65 mm |



Quality management system
ISO 9001

- Customer focus
- Customer satisfaction
- Continuous improvement
- System/process effectiveness

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