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RayMon10TM
A powerful and rugged
handheld CZT detector
for dose and
high-resolution
isotope ID

RayMon10™

a powerful and rugged handheld detector for dose and high-resolution isotope ID

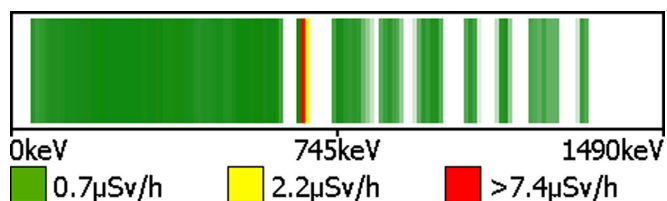
The RayMon10™ is one of the most powerful and rugged hand-held radiation monitors in the world. It can be used to detect, measure and accurately identify gamma ray emitting radionuclides, providing high-resolution isotope identification using the latest CZT coplanar grid detector technology. This detector is highly linear and provides more stable performance than scintillation type detectors such as NaI(Tl) or LaBr3.

The RayMon10™ is robust, lightweight and easy to use; its portability and usability are second-to-none and provides the highest resolution of any monitor in its class.



Information from single or multiple handhelds can be easily downloaded to a PC or laptop via USB for analysing data and report generation. Types of report include: date/time, photo, GPS positioning, radiation spectra and isotope analysis.

RadBar™ Technology



RadBars show the dose contribution from different gamma ray energies allowing isotope ID and dose information to be combined.



Features:

- Energy resolution: 2.0-2.5% FWHM @ 662 keV
- Energy range: 30 keV to 3.0 MeV enabling high resolution isotope ID using the latest advances in CZT detector technology
- Easy to use RayMon10 Analysis software
- Search and alarm capability
- Rugged handheld platform
- Sunlight-visible VGA display shows images, maps and data in ultra-sharp detail
- Integrated GPS for location tagging
- Long-life rechargeable battery - 8 hours in continuous use
- Highest resolution isotope ID using the latest CZT detector technology
- RadBar™ included for spectral dose visualisation
- Fully compatible with Kromek's desktop spectroscopy software, MultiSpect Analysis™
- Library of 91 radionuclides. User can add custom nuclides for their application
- Optional integrated 5MP camera

Applications include: ■ First responders ■ Nuclear installation monitoring ■ Nuclear accident response ■ Security screening undertaken by customs, police, fire and rescue services ■ Military ■ Site surveys ■ Civil Defense ■ Health Physics

TECHNICAL DATA

DETECTOR PROBE

Detector: CZT detector 10 x 10 x 10 mm³

High energy resolution: 2.0-2.5% FWHM @ 662 keV

Display: 480 x 640 pixel (VGA) 16-bit colour TFT with LED backlight

Indicator: On screen display confirming detector connected.

Dose rate display: µSv / hr

Connection: USB

Detector Testing: Tested by National Physical Laboratory in accordance with the conditions in;

ANSI N42.31 (2003) "Measurement procedures for resolution and efficiency of wide-bandgap semiconductor detectors of ionizing radiation"

ANSI N42.34 (2006) Section 7.1 "Performance criteria for hand-held instruments for the detection and identification of radionuclides"

BS EN 62327:2011 Section 9.6 "Hand-held instruments for the detection and identification of radionuclides and for the indication of ambient dose equivalent rate from photon radiation"

NPL Good Practice Guide No. 14 "The examination, testing and calibration of portable radiation protection instruments"

PERFORMANCE

Energy range (Gamma): 60 keV to 3.0 MeV

Maximum throughput: 30,000 cps High level indicator warning on screen

Number of channels: 4096

Battery: 5000 mAh Li-ion rechargeable module giving 8 hours of continuous use

Library: 91 radionuclides

Dose rate: Demonstrated up to 1mSv/h@ 662 keV

Dose accuracy: Better than +/- 20%

Stability: Peak drift +/- 1 channel (4096) over 8 hours continuous measurement

Analysis Software: RayMon10™ Analysis software

PDA platform: Windows mobile 6.1

PHYSICAL

PDA Unit: 17.6 x 19.2 x 15.0 cm

Weight: 769 g

Probe + Cable: 24 x 4.5 x 4.5 cm

Weight: 252 g

POWER ADAPTOR

Input: 100 – 240 V 0.8 – 0.4 A 47 – 63 Hz

Output: 5.0V 4.0A

International mains socket adaptors included as standard.

ENVIRONMENTAL

PDA Unit

Performance is specified at an ambient temperature of 25°C. Operation at extreme temperatures (above 50°C or below 5°C) is not recommended. Meets or exceeds:

Water:

Immersed in 3.3 ft (1 m) of water for 240 minutes MIL-STD-810F, Method 512.4, Procedure I, IEC-529, IP68

Sand & dust: Totally protected against dust MIL-STD-810F, Method 510.3, Procedure I, II, IEC-529, IP68

Drop:

26 drops at room temperature from 4 ft (1.22 m) onto plywood over concrete
6 additional drops at -22 °F (-30 °C)
6 additional drops at 140 °F (60 °C)
MIL-STD-810F, Method 516.5, Procedure IV

Vibration:

General Minimum Integrity and Loose Cargo tests MIL-STD-810F, Method 514.5, Procedure I, II

Operating Temperature:

-22 °F to 140 °F (-30 °C to 60 °C)
MIL-STD-810F, Method 501.4, Procedure II
MIL-STD-810F, Method 502.4, Procedure I, II, III

Storage Temperature:

-40 °F to 158 °F (-40 °C to 70 °C)
MIL-STD-810F, Method 501.4, Procedure I
MIL-STD-810F, Method 502.4, Procedure I, II, III

Temperature shock:

-22 °F/149 °F (-30 °C/+65 °C)
MIL-STD-810F, Method 503.4, Procedure I

Humidity:

90%RH temp cycle 32 °F/158 °F (0 °C/+70 °C)
MIL-STD-810F, Method 507.4

Altitude:

15,000 ft (4,572 m) at 73 °F (23 °C)
to 40,000 ft (12,192 m) at -22 °F (-30 °C)
MIL-STD-810F, Method 500.5, Procedure I, II, III

Detector Probe

IP65
EMC tested

Recommended service interval: Annual



RayMon10™

Every Kromek RayMon10™ comes complete in its own heavy-duty weatherproofed and ruggedised Peli Case containing the following items as standard:

- Ruggedised handheld PC
- RayMon10™ detector probe
- Detachable coiled cable
- Wall charger with universal international plug adapters
- Accessory/storage pocket
- Operating manual
- Test certificates

Optional extras:

- Extra battery pack
- 12 volt in-car charger
- 5MP camera module



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