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Kromek Group PLC
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3 December 2020

Kromek Group plc
("Kromek" or the "Group")

Kromek launches the D5 RIID high performance radiation detector

World's smallest RIID with high accuracy and ultra-low false alarm rate

Kromek (AIM: KMK), a worldwide supplier of detection technology focusing on the medical, security screening and nuclear markets, announces the launch of the D5 RIID, the world's smallest high performance radioisotope identification device ("RIID"). The ruggedised device, with ultra-low false alarm rate, is designed for military, homeland security and industrial use.

The D5 RIID was developed under a programme with the Defense Threat Reduction Agency of the US Department of Defense. It detects a wide range of sources, including special nuclear material and mixed, shielded and heavily masked configurations. It provides high accuracy dose measurement and has an industry-leading ultra-low false alarm rate of less than 1 in 24 hours. The D5 RIID combines this advanced performance with being small, lightweight and easy-to-use - capable of being operated in one hand. It can also be used when wearing all levels of PPE, including gloves. It offers multiple modes of configuration, including being able to provide app-based training, and can be easily integrated into standard and custom networks.

It is the first device to be launched in Kromek's new D5 product range, which expands the Group's radiation detection portfolio to encompass devices specifically designed for more challenging use cases and harsh environments. This next-generation of product has a larger crystal, which enables higher accuracy and sensitivity - capable of detecting mixed, shielded and heavily masked configurations including special nuclear material - as well as being ruggedised.

Dr Arnab Basu, CEO of Kromek, said: *"We are delighted to have launched the D5 RIID, which truly sets a new benchmark in radioisotope identification. The level of accuracy, combined with small size, far exceeds competing military standard detectors, enabling the rapid identification of radiological threats. As the first of our new D5 range, this device expands our portfolio to provide products ideal for use in harsh environments and for more challenging applications alongside our existing D3 solutions that are aimed at fleet deployment for large-scale networking across urban areas. We are proud to be continuing to drive innovation in this crucial area to enable rapid, informed decisions to be made in response to a radiation threat wherever it may appear."*

For further information on the D5 RIID, please visit:
https://www.kromek.com/product/d5-riid/

D5 RIID Detector Specification

Detector type	CLLBC - Gamma and Neutron detection
Detector size	1.5" diameter x 1.5" long
Gamma energy range	30 keV to 3 MeV
Gamma dose rate range	0.01 µSv/h (10 µR/h) to 100 µSv/h (10 mR/h) spectroscopic 100 µSv/h (10 mR/h) to 1 Sv/h (100 R/h) high dose sensor
Dose accuracy	± 10% for Cs137
Gamma resolution	Typically 3.5% @ 662 keV
Area efficiency*	1.62 relative to a 2" x 2" Ø NaI
Neutron sensitivity	= 16cm^2
Neutron detector gamma rejection	Better than 10^{-7} meets ANSI N42.34 (2015) section 6.7
Operational temperature range	-20°C to 50°C
Humidity	Up to 93% RH
Moisture/dust	IP67
Batteries	Primary cells: 2 x AA field replaceable Internal rechargeable: Li-Ion >2.25 Ah
Battery capacity (primary cells)	24 hours at normal background
Battery charging	1 hour to 50% capacity, 4 hours to full charge
Wired interface	USB-C
Wireless interface	Bluetooth Wi-Fi 802.11a/b/c/g/n
Firmware updating	Update over USB
Display	2.8" colour antiglare with backlight suitable for both high and low light
LED	Three colour
Alarm notifications	Visual, audio and vibration

Device size	173.1mm x 79mm x 41.1mm
Device weight	660 g (1.47 lb)
File storage	ANSI N42.42
Confirmation mode	30 sec to 5 minutes
False alarm rate	Better than ANSI N42.34 (2015)
Isotope ID	ANSI N42.34 (2015)
Hardware compliance	ANSI N42.34 (2015)
Rugged military standard compliance	MIL-STD-810Gm w/Charge 1
Calibration stabilisation	Sourceless natural atmospheric

* Area efficiency = $A\varepsilon_{662\ keV} / R_{662\ keV}1.5$

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About Kromek Group plc

Kromek Group plc is a technology group (global HQ in County Durham) and a leading developer of high performance radiation detection products based on cadmium zinc telluride ("CZT") and other advanced technologies. Using its core technology platforms, Kromek designs, develops and produces x-ray and gamma ray imaging and radiation detection products for the medical, security screening and nuclear markets.

The Group's products provide high resolution information on material composition and structure and are used in multiple applications, ranging from the identification of cancerous tissues to hazardous materials, such as explosives, and the analysis of radioactive materials.

The Group's business model provides a vertically integrated technology offering to customers, from radiation detector materials to finished products or detectors, including software, electronics and application specific integrated circuits ("ASICs").

The Group has operations in the UK and US (California and Pennsylvania), and is selling internationally through a combination of distributors and direct OEM sales.

Currently, the Group has over one hundred full-time employees across its global operations. Further information on Kromek Group is available at www.kromek.com and https://twitter.com/kromekgroup.

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