RADCOMM
RADIATION DETECTION SYSTEMS

RC7058

Hybrid Radiation Portal Monitor System

RadComm's exclusive Hybrid Radiation Portal Monitors are designed to detect radioactivity contained in a moving vehicle loaded with any type of material regardless of the density. The Hybrid PVT/Crystal system combines the features of a large volume PVT system along with enhanced detection capabilities of a crystal system such as isotope identification. Exceeds ANSI N42.35 by providing spectroscopic detection with superior NORM discrimination.

Flexibility

Designed to meet virtually any application, detector panels are available in a variety of PVT and sodium iodide Crystal configurations. The RC7058 utilizes a high quality 58L PVT scintillator and a 2.1L NaI Crystal scintillator(s) specifically selected for high resolution signal response. The system architecture allows for either single or dual Crystal configuration as well as the option for neutron detection.

Isotope Identification

NaI Crystals utilize photo-peak energy recognition providing high quality signal output and spectroscopic analyses. Detailed isotopic identification can be performed in real time and on a continuous basis, significantly improving noise cancellation and restoration of ambient background.

Ease of Use

The detector electronics utilizes modular designs allowing fast and easy replacement of parts should a problem arise. The Windows based software is extremely flexible, with easy to follow menus in the language of the country where the system is being used. The menus include Graphical Alarm data, total system configuration, manual scan mode, power outage tracking, non-radioactive testing, etc.

Enhanced Performance

The RC7058 PVT and Crystal scintillators utilize RadComm's innovative Region Of Interest (R.O.I.) technology to focus on the isotope's specific gamma energy distribution. Specific R.O.I. windows can be configured to enhance the detection of specific isotopes. The advanced software algorithm also permits the user to monitor specific isotopes without initiating an alarm. This is beneficial as NORM energy peaks play havoc on traditional PVT based systems.

Higher Sensitivity

The combination of scintillation materials significantly improves the detection of soft gamma energies produced by isotopes such as gamma energies produced by isotopes such as Americium-241 and Cobalt-57.

Reliability

The Hybrid Radiation Portal Monitors have built-in redundancy. In the event that one of the scintillators in the detector panel fail, the unit will continue to operate. In addition, advanced algorithms allow for continuous stabilization without the need of radioactive check sources ensuring accurate isotope detection.

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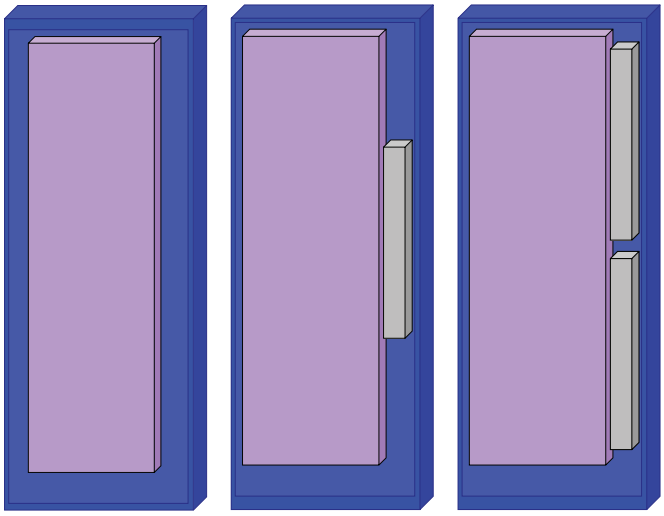
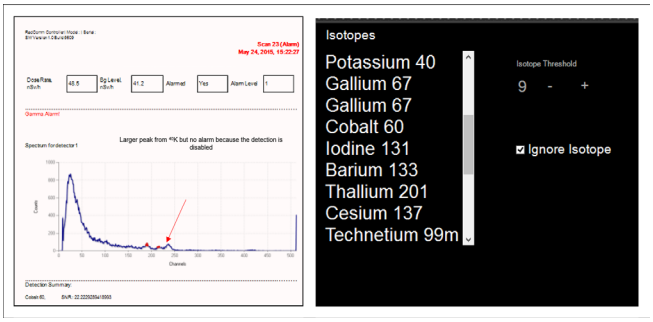
Detector Configurations



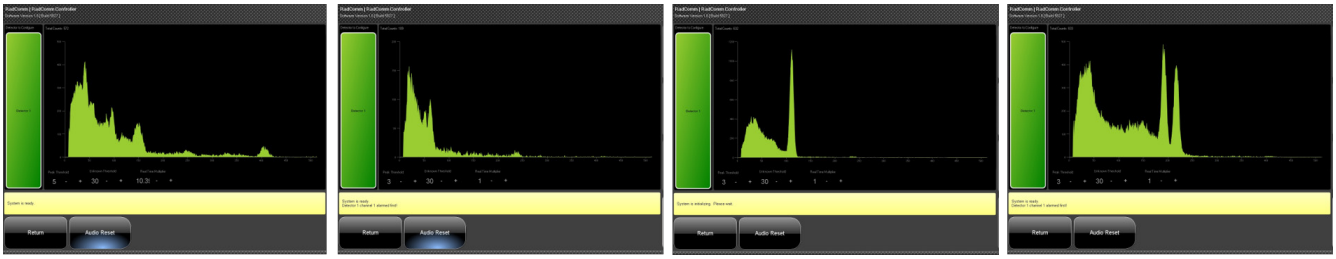
PVT only | PVT/Crystal (Single) | PVT/Crystal (Dual)

NORM Discrimination



Hybrid system has the ability to monitor specific isotopes without initiating an alarm.

NaI Crystal Spectral Response Examples



^{232}Th | ^{133}Ba | ^{137}Cs | ^{60}Co

Detection Limits and Identification

Isotopes	Detectable Activity For 58L of PVT	"Detectable Activity For PVT 58L and 2.1L of NaI"	"Detectable Activity For 58L of PVT and 4.2L of NaI"
^{57}Co	430kBq(11.8 µCi)	201kBq(5.5µCi)	142kBq(3.9 µCi)
^{133}Ba	143kBq(3.9µCi)	143kBq(3.9µCi)	143kBq(3.9µCi)
^{137}Cs	181kBq(5.0µCi)	181kBq(5.0µCi)	181kBq(5.0µCi)
^{60}Co	107kBq(2.9µCi)	107kBq(2.9µCi)	107kBq(2.9µCi)
^{241}Am	3600kBq(99µCi)	591kBq(16.2µCi)	420kBq(11.5µCi)
Isotope	**Isotope Identification Activity For 58L of PVT**	**Isotope Identification Activity For Crystal of 2.1L**	**Isotope Identification Activity For Crystal of 4.2L**
^{57}Co	No Isotope ID Possible	339kBq(9.3µCi)	241kBq(6.6 µCi)
^{133}Ba	No Isotope ID Possible	391kBq(10.7µCi)	277kBq(7.6µCi)
^{137}Cs	No Isotope ID Possible	460kBq(12.6µCi)	329kBq(9.0µCi)
^{60}Co	No Isotope ID Possible	288kBq(7.9µCi)	204kBq(5.6µCi)
^{241}Am	No Isotope ID Possible	986kBq(27µCi)	704kBq(19.3µCi)

Note: *Values are based on a source at a distance of 2 meters in the air from the detector moving at a speed of 10 km/h.*

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