Maritime Search

Detective-200™
Ruggedized, Ultra-High-Sensitivity, Transportable HPGe Radionuclide Identification System
“Maritime Security is critical to interdicting drugs and other threats before they reach our shores” according to Hon. Janet Napolitano, DHS Department Secretary. Nothing may be more critical to safety and security than interdicting a nuclear threat. To address this challenge, ORTEC has developed the Detective-200, a ruggedized, ultra-high-sensitivity, transportable HPGe radionuclide identification system. The Detective-200, based on a large High Purity Germanium (HPGe) detector, was designed to survive in a harsh maritime environment, and as a flexible tool that can be deployed in a variety of Homeland Security missions, from mobile and maritime search to choke point monitoring. With the superior resolution offered by HPGe detectors, a Maritime Search System utilizing Detective-200s is capable of detecting nuclear threats other systems might overlook, and it excels at detecting nuclear threats which have been shielded or masked to avoid detection.

The Detective-200, with integrated Detective-Remote software, is the optimum choice for the Coast Guard, Navy, and state and local law enforcement to use for the nuclear interdiction missions of Maritime Domain Awareness. Maritime Domain Awareness encompasses anything in the Global Maritime Domain that could impact the safety, security, environment, or economy of the United States. Maritime Domain Awareness is a challenge, especially as it relates to nuclear interdiction. With over 350 ports, more than 12,000 miles of coastline, nearly 13 million domestic recreational craft registered in the U.S., and more than 100,000 small commercial fishing vessels, finding a nuclear threat might be compared to finding a needle in a haystack. Fortunately, the Detective-200 can both find and identify the threats.
The ORTEC Detective family of products is widely deployed by numerous government organizations to fight the Global War on Terrorism (GWOT). The proven performance of these instruments has been documented in numerous independently sponsored government test programs. The Detective-200’s ability to detect Special Nuclear Material (SNM) and to significantly reduce both false positives and false negatives makes it ideal for detecting, locating and identifying nuclear threats when configured for a maritime search system.

The Detective-200 and Detective-Remote software employ a modular concept, which allows Maritime Search Systems to be deployed as a single detector system or as an array of multiple Detective-200s which increases the sensitivity, lowers the minimum detection level, and increases the stand-off detection distances. The modularity of the Detective-200 allows it to be a portable asset for use in mobile applications where the system needs to be moved from one vessel to another, or from one coast to the other should the need arise. The portability and mobile design is essential in deploying for specific events or to support intelligence activities quickly and easily.

The flexibility of the Detective-200 and Detective-Remote software allows agencies to deploy in a variety of ways. For example, the system can be mounted on a vessel or be temporarily configured as an “ad-hoc” choke point monitoring solution at an entry point into a harbor or the underside of a bridge. For details on detection performance, please contact the ORTEC factory.

**Detective-200 for Maritime Applications**

The Detective-200 was designed to operate in the harsh environments encountered during Maritime missions. The Detective-200 is IP67 compliant, making it water proof (it floats!), dust proof, and immune to salt spray. The system is shock and vibration resistant and has passed extensive testing (drop test video available upon request). The system has two sturdy, fold-flat handles that make it easy to transport from vessel to vessel if the need arises.
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Modes of Operations
The ORTEC Detective-Remote software package can be configured to operate in a variety of modes, accommodating multiple CONOPs. The standard modes of operation include:

**Pass By or Slow Pass Mode** – This mode is for slowly passing another targeted vessel and monitoring that vessel for illicit nuclear materials. ORTEC has collected data with real SNM sources and can provide detection limits for various sources at various speeds and at various distances.

**Patrol Mode** – This mode may be used when patrolling a harbor or marina where small craft are docked.

**Inspection Mode** – This mode is used when a craft is stopped for inspection. Data can be collected the entire time the vessel is stopped. When performing nuclear interdiction measurements, count times are a very important factor in maximizing the detection performance. ORTEC has modeled the Detective-200 performance for maximum detection and identification configurations and can provide specific limits of detection at various distances with various amounts of shielding and count times. Performance depends upon a variety of factors including the number of detectors and the collimation. Please consult the ORTEC factory for more details and specific performance information.

Flexible Design Allows Deployments in Various Configurations to Changing Situations
The Detective-200 and Detective-Remote software can be configured to meet the needs of a large number of applications and the solution can be setup to address the mission requirements. The Detective-200 can be deployed in wide area search systems, choke point monitoring and maritime applications. Please contact your local ORTEC sales representative with your needs and discover what ORTEC can do for you.