



The **Enhanced Maritime Biological Detection (EMBD)** system is a robust, automated bio detection instrument suite that provides early warning capabilities to the U.S. Navy.

EMBD provides automated detection and identification of airborne biological agents at very low levels, triggers local and remote warning systems, and communicates threat information over standard communication systems.

The system uses laser-induced fluorescence, to continuously monitor the atmospheric background for potential biological agents. When the system detects a bioaerosol signature, the collector/ concentrator is initiated to sample hundreds of liters of air per minute, providing a concentrated liquid sample for automated identification.

Sample identification is executed via lateral flow immunoassays with an automated reader assembly. If the assay shows signs of biological agents, an alarm is generated and a portion of the collected sample is provided for confirmatory laboratory analysis.

EMBD is an upgrade to the Joint Biological Point Detection System (JBPDS). The upgrade adds a higher performance detector, the Rapid Agent Aerosol Detector (RAAD) developed by the MIT- Lincoln Laboratory. The RAAD uses seven independent detection channels to provide unmatched sensitivity and selectivity, giving the warfighter best-in-class early warning of a biological attack, while minimizing operational costs.

Joint Biological Point Detection Systems (JBPDS) and Enhanced Maritime Biological Detection (EMBD) are products of Chemring Sensors and Electronic Systems, part of Chemring Group PLC. This product is subject to the United States (U.S.) International Traffic in Arms Regulation (ITAR), 22 CFR Chapter 1, Subchapter M, Parts 120-130. The sale, transfer, transportation, or shipment of this product to a foreign person, inside or outside of the U.S., is prohibited or restricted without proper authorization or license.

Functional Specifications

Detection Method	Laser Induced Fluorescence
Identification Method	Automated Lateral Flow Immunoassay
Targets Detected	Bacteria, Viruses and Toxins
Multiplexing	Detection: Agnostic Identification: 10 targets per assay card
Detection Time	<30 seconds
Identification Time	<15 minutes

Other

Operating Temp.	-18°F to 122°F (-28°C to 50°C)
Storage Temp.	-40°F to 158°F (-40°C to 70°C)
Vibration	MIL-STD-810 Method 514.4 Proc. 7 - common carrier / Proc. 3 loose cargo
Electromagnetic Interference (EMI)	MIL-STD-461 MIL-STD-462

Chemring Sensors and Electronic Systems
 4205 Westinghouse Commons Drive, Charlotte, NC 28273
 (980) 235-2200
info@chemringsensors.com
chemring.com/about-us/our-business/chemring-sensors-and-electronics
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Version: 04/11/2025