

# Rugged ENVI BioScout

Bioaerosol Detector with  
a 3-in-1 Capability



- 3-in-1 Continuous bioaerosol monitoring
- Sample collection for further BWA analysis
- Military Grade; Specially designed for for harsh military use in naval vessels & armored vehicles

# Rugged ENVI BioScout

Bioaerosol Detector with a  
3-in-1 Capability



Rugged ENVI BioScout™ provides a robust and sensitive bioaerosol detection solution that continuously monitors and warns for the presence of harmful airborne biological particles and collects air samples for further BWA analysis at the time of a biological alarm.

Intentional releases of aerosolized biological warfare agents are considered as one of the most dreadful scenarios of bioterrorism. To reduce the amount of casualties and fatalities, real-time detection of harmful bioaerosols is an essential step for the whole process of biothreat management: it does not enable only timely warning and protection but further analysis of the released agents and correct medical countermeasures.

## KEY FEATURES

- 3-in-1: Continuous bioaerosol monitoring without consumables – alarms to issue early-warning – sample collection for further BWA analysis
- Military Grade; Rugged design for use in demanding environmental conditions
- Ease of continuous use and ease of maintenance – low lifecycle costs
- High sensitivity and fast response

## APPLICATIONS

- Armored CBRN reconnaissance vehicles
- Military Naval vessels

## Rugged ENVI BioScout™: a Bioaerosol Detector with a 3-in-1 Capability

Biothreat management is challenged by several factors like the ability of biological agents to cause epidemics, illness or death in relatively minor quantities and after long incubation periods. Accurate and reliable bioaerosol detectors forming a strategic architecture can give fast early indication of potentially hazardous biological particles disseminated in ambient air and hence assist to diminish disastrous effects.

### Multifunctional Detection

Rugged ENVI BioScout™ combines three functions in a single device: it monitors continuously ambient air, triggers early-warning for detected potential airborne biological threats including bacterial, viral and rickettsial agents and toxins and initiates automatic air sample collection when a biological alarm is issued. Rugged ENVI BioScout™ utilizes proven real-time biodetection technology in which fluorescence and elastic scattering signals from 0.5 – 10 µm airborne particles are excited with a CW laser diode at 405 nm and measured with photomultiplier tubes. The automated bioaerosol sampling is compatible with various standard collection filters and the air samples can be easily retrieved for provisional or confirmatory BWA analysis with PCR/real-time PCR techniques and immunoassays like ENVI Assay System rapid tests.

## Ruggedized Solution with Ease of Use and Maintenance

Rugged ENVI BioScout™ is featured with robust construct combined to high sensitivity, good selectivity for intentional bioaerosol releases and fast response according to gathered and analyzed data on detected particles. The device can be adapted to different outdoor and indoor environments through its adjustable, advanced alarm algorithm.

Durability, simple use and maintenance with low lifecycle costs are valued features for a bioaerosol detector operating in demanding conditions in military and civil defence. Rugged ENVI BioScout™ has been designed to meet a selection of military standards for environmental requirements, and short-time replacements and preventive maintenance can be performed with basic tools and minimum efforts by end-user's service personnel.

### Versatile Device with Modular Design

Rugged ENVI BioScout™ is intended to operate as an integral part of fixed and mobile EnviScreen CBRN Monitoring Systems with EnviScreen Operix as a user interface, but it is easy to integrate to 3rd party systems as a networked point-detection solution as well. Rugged ENVI BioScout™ is compatible with various communication methods and its modular design enables broadening of the device capabilities: an additional sample collector, a remote alarm unit, a BWA identifier or other optional modules can be connected to Rugged ENVI BioScout™ through various interface options.



## Technical Data

<b>Size</b>	Approx. 279 x 215 x 357mm without a rack Approx. 335 x 470 x 428mm with a rack
<b>Weight</b>	Approx. 8,3 kg without mounting rack
<b>Detection method</b>	UV fluorescence Elastic scattering
<b>Particle size</b>	0,5 – 10 µm
<b>Sensitivity</b>	Typically ≤ 100 ACPLA
<b>Response time</b>	< 30 seconds
<b>Air flow rate</b>	2 l/min
<b>Light source</b>	CW laser at 405 nm
<b>Secondary air sampling</b>	Compatible consumables: • Disposable 37-mm 3-piece filter cassettes • 37-mm filters like PTFE and gelatin filters
<b>Data communication</b>	RS-232, RS-485, Ethernet
<b>Power</b>	9 – 36 VDC (85 – 264 VAC with optional external AC adapter)
<b>Power consumption</b>	Typically 50 W
<b>Outputs</b>	LED panel to indicate device status Alarm buzzer for audio alarms
<b>Mounting</b>	Vertical mounting, Optional rugged shock/vibration rack available
<b>Operating humidity</b>	0 % to 90 % (non-condensing)
<b>Temperature</b>	Operating: -35 to +50 °C Storage: -40 to +70 °C
<b>EMI/EMC</b>	MIL-STD-461 E, essential parts MIL-STD 1275D, essential parts IEC 61000-4-2:2008 IEC 61000-4-8:2009
<b>Environmental</b>	MIL-STD-810G, essential parts JSS55555, essential parts
<b>Shock/Vibration</b>	MIL-STD-810G, essential parts (with a mounting rack)
<b>Available versions</b>	Rugged ENVI BioScout (with an internal sample collector) Rugged ENVI BioScout ESC (with an external sample collector)

