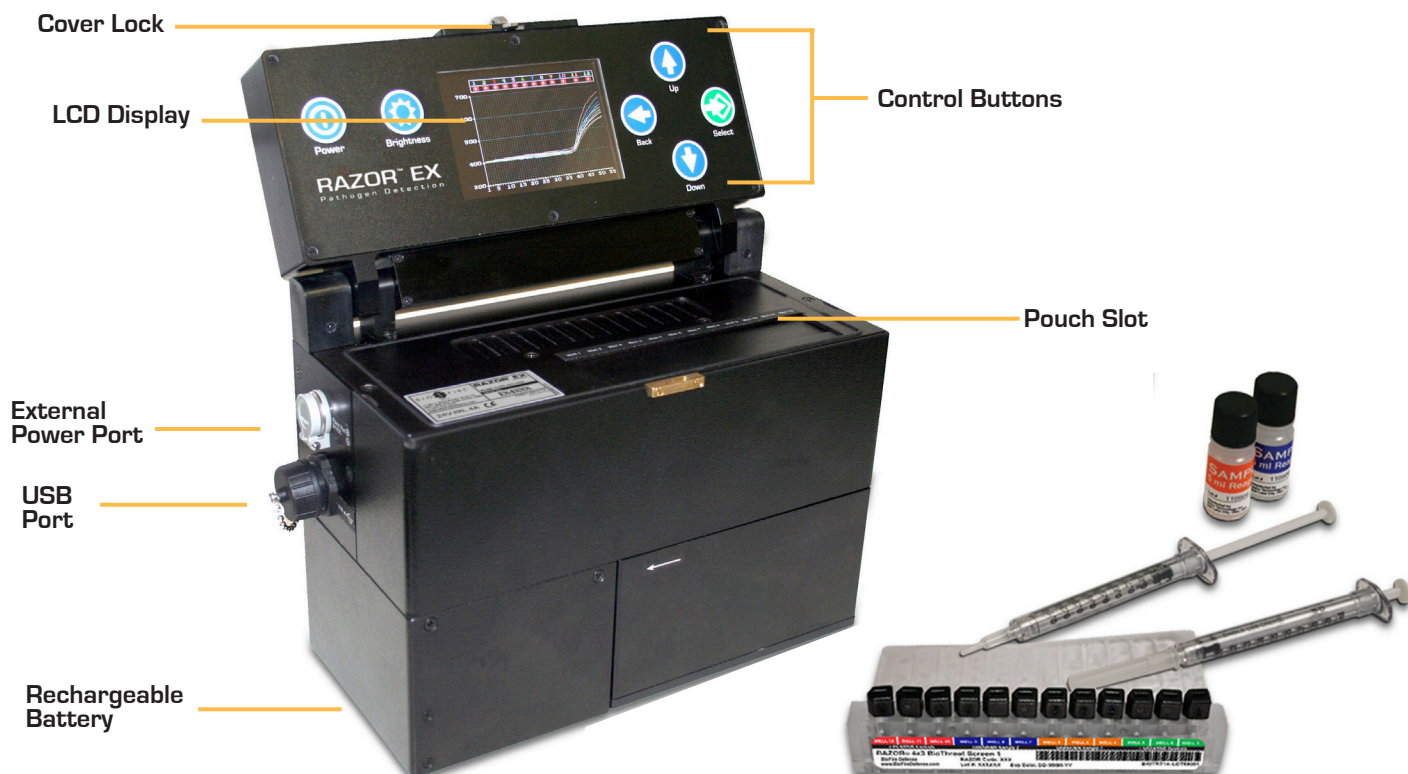


RAZOR® EX BioDetection System

Information Sheet



Complete Field-deployable Solution

The RAZOR EX system employs real-time PCR technology to deliver the most reliable and sensitive detection and identification of biological pathogens in the field. Designed specifically for field use, the compact and lightweight design of the RAZOR EX allows it to be hand carried and minimal sample preparation requirements make it easy to use. Used with The 10® Target Screen Kit, the RAZOR EX simultaneously tests ten pathogens with reliable, DNA-based results available in less than 30 minutes. Developed for first responders and front line military troops, it is easily operated while working in protective equipment under extreme conditions. This battery powered instrument includes Bluetooth® capabilities, bar code reader, and a bright, easy-to-read color screen.

The RAZOR EX utilizes BioFire's patented reagent pouch system—integrated freeze-dried reagents packaged in durable plastic pouches for incomparable ease of use. A variety of pre-formatted pouch configurations are available for biothreat, food testing, water testing, or environmental testing applications.

The Following Tests are Available:

BioThreat	Food Testing	Water Testing	Environmental
Anthrax	<i>Listeria</i>	<i>Cryptosporidium</i>	Coxiella
Ricin	<i>Salmonella</i>	<i>Salmonella</i>	Botulism
Smallpox	<i>Campylobacter</i>	<i>E. coli</i> O157	Brucella
Plague			Tularemia

- **Reliable:** Less than 1% error rate.
- **Sensitive:** Detection limit as low as 100 cfu/ml.
- **Specific:** Less than 1% false positive error rate.
- **Fast:** Results in less than 30 minutes.
- **Field Portable:** weighs 11 lbs (4.9kg), battery powered.
- **Validated Technology:** same PCR technology used in central labs.
- Used world-wide by Military, Hazmat, and First Responders.

CBRN Detection

Quickly assess white powder threats for harmful biological pathogens. The RAZOR EX tests for 10 Category A and B BioTerrorism agents.



RAZOR EX Instrument

The compact unit comes loaded in a durable Pelican case with the instrument, battery, and recharger. The system is 110/220V compatible and has passed rigorous environmental testing. It was designed to operate as a stand-alone unit (without a PC).



- **Automatic analysis**
(Yes/No answer)
- **Battery powered**
Re-chargeable
(4 runs/charge)
- **Hot swappable power**
- **Built-in color display** shows real-time fluorescent curves
- **Wireless or USB 2.0 connectivity**
- **Weighs 11 lbs.**

User Interface

Internal calibration and diagnostics ensure the instrument is functioning properly before and during the run. Automatic analysis software runs “on-the-fly,” with raw data and software analysis presented simultaneously.

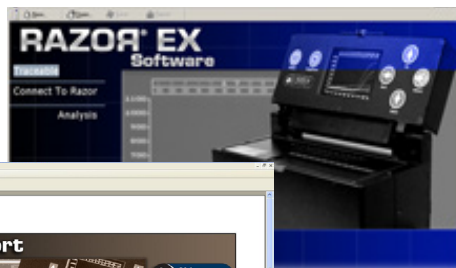
- Designed for use in personal protective equipment (PPE)
- Large intuitive push-buttons
- Bright color screen
- Bar code reader for protocol and pouch information uploads
- Step-by-step screen prompts provide set-up guidance

Software

Desktop software provides an additional tool to expand the RAZOR EX capabilities to aid in post-mission support.

Software features include:

- After incident data analysis
- Data archiving
- Printable reports



Training

The system comes with a training DVD containing all the necessary multimedia tools for sampling, pouch loading, machine operation, maintenance, and software. On-site training is available by special arrangement.

Ordering Information

Catalog No.	Instrument Options
RAZR-ASY-4000	690 Filter Set (HP, Commercial Reagents)
RAZR-ASY-4001	510 Filter Set (TQ, Hydrolysis Probe Reagents)

Instrument Specifications

Sample Description

- 12 reaction per sample pouch containing freeze-dried reagents. Positive and negative controls are included with each pouch.
- Reaction Volume: 100 μ L

Fluorescence Acquisition

- One color optics module
- Excitation wavelengths 470 \pm 20 nm
- Emission wavelengths 530 \pm 10 nm—TaqMan[®]
- Emission wavelengths 690 \pm 60 nm—HybProbe[®]

Power Supply

- Rechargeable battery pack (included with instrument)
- External Power Supply: 24 V DC, 4 A Output, 110–220 V AC input

Instrument Dimensions and Weight (w x d x h)

- Size: 25.4 x 11.4 x 19 cm (10 x 4.5 x 7.5 in.)
- Weight: 4.9 kg (11 lb.) including battery

Performance Parameters

- Instrument set-up time \leq 5 min.
- Sample run time \leq 30 minutes (average)

Temperature Control

- Lower Heater: 56 $^{\circ}$ C to 64 $^{\circ}$ C/Upper Heater: 86 $^{\circ}$ C to 94 $^{\circ}$ C
- Accuracy: \pm 1.0 $^{\circ}$ C from target temperature
- Uniformity: 0.5 $^{\circ}$ C in a single sample—Intersample
1.0 $^{\circ}$ C across sample area—Intersample
- Operating: 0 $^{\circ}$ C to 40 $^{\circ}$ C
- Storage: -33 $^{\circ}$ C to 70 $^{\circ}$ C

Desktop Software

- Windows[®] XP Software (compatible with Windows 7 & 8)
- Download data for offline analysis
- Intuitive navigation
- After action reports

Instrument Certifications

- CE Mark
- Manufactured under cGMP

Parts List

The following items are included with the instrument

Instrument

RAZOR EX Instrument, Battery Recharger, 24 V 4A Power Supply, Battery Pack, USB 2.0 Data Cable, Air Filter Assembly, Desktop Software, Users Manual, Quick Guides, Hard Carrying Case, Plunger Twist Tool

Tool Kit

5 1/2" Needle Nose Pliers, Lens Cleaning Solution, Lens Cleaning Tissue

The purchase of these products includes a limited, nontransferable instrument license under specific claims of one or more U.S. patents as listed on BioFire Defense's web site (<http://biofiredefense.com/legalnotices>) (the "Web Site") and owned by the University of Utah Research Foundation and/or BioFire.

The information contained in this information sheet relates to defense articles controlled for export under the International Traffic in Arms Regulations (ITAR), administered by the U.S. Department of State, Directorate of Defense Trade Controls. The transfer of any hardware or technical data controlled by the ITAR to any unauthorized persons, requires prior written approval from the U.S. Department of State.