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bringing technology to life

Technical information

DIAGNOSTICS

# Bio-Seeq Portable Veterinary Diagnostics System

## Rugged instrument for rapid diagnosis of animal diseases in the field


- **Rugged, portable, weatherproof system designed for field use**
- **Supports a wide range of sample types**
- **Barcode scanner eliminates assay parameter entry**
- **Automated sample preparation and analysis**
- **Sophisticated LATE PCR diagnostic assays**
- **Battery powered and both network and GPS enabled**
- **Can be decontaminated by immersion**

Disease outbreaks such as Foot-and-mouth, Avian Influenza and Bluetongue have highlighted the importance of early identification of the disease in limiting the spread. The control of outbreaks is complicated by the need to transport all samples to a reference laboratory for identification. This is a major problem if the lab is located in another country or continent.

The Bio-Seeq system addresses the issue by taking laboratory standard identification into the field. It has been designed specifically for field veterinarians. The Bio-Seeq Portable Veterinary Diagnostics System comprises a portable briefcase-sized Polymerase Chain Reaction (PCR) instrument and a disposable sample preparation unit. Together they provide rapid on-site identification – approximately 90 minutes depending on the assay- in a wide range of weather conditions, by veterinarians or other specialists who require no technical understanding of PCR.

The system builds on Smiths Detection's globally recognised leadership in the deployment of laboratory quality technologies in formats suitable for field use by non-experts. These include field-based PCR systems for bioterrorism applications.

LATE PCR

# Bio-Seeq Portable Veterinary Diagnostics System

The Bio-Seeq Portable Veterinary Diagnostic system contains five combined PCR/Sample preparation stations. It allows the user to run the same assay on five samples or five different assays at the same time. The system is simple to use. The user places the Sample Preparation Unit (SPU) on the instrument. All actions are then controlled by the instrument and a positive or negative result is displayed to the user at the end of the analysis.

**LATE-PCR**

The Bio-Seeq Portable Veterinary Laboratory instrument and SPU use an advanced PCR chemistry called Linear After The Exponential PCR or LATE-PCR, developed at Brandeis University. LATE-PCR enables users to carry out assays with much greater discriminatory power than has typically been available to date.

LATE-PCR can be highly multiplexed to allow the detection and identification of a wide range of targets in a single assay. It can accurately determine the strain of an individual infection, critical in Avian Influenza where it is vital to discriminate between the pathogenic strain of H5N1 and more common forms of the disease.

As an asymmetric PCR chemistry, the products are available for direct sequencing without the common clean-up procedures needed to remove primers. This reduces the sample handling time and allows a shorter time to sequencing result.

Smiths Detection holds an exclusive license to LATE-PCR.

## Technical data

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| Size (cm) | 47.0 L x 35.7 W x 17.6 D |
| Weight | 12 Kg (25 lbs) including battery |
| Format | Briefcase format with carrying handle |
| Operating Conditions | +4° C to +40° C |
| Storage Conditions | -20° C to +70° C |
| Ingress Protection (IP) Rating | P67 which allows full immersion for decontamination of the unit |
| Sample capacity | 5 samples |
| Global Positioning Systems | Uses GPS to provide the current location of the of the instrument |
| Wi-Fi | For internet communications with suitable Wi-Fi devices |
| Internal Battery Pack | Built in rechargeable battery pack |
| External Power | External 14 VDC (from 100-240 VAC, 50-6 0Hz supply)<br>External battery such as car battery via lighter socket |

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