

VereID™ Biosystem



VereID™ Biosystem combines molecular biology, microfluidics and microelectronics to bring the future of diagnostics and surveillance to you today. The VereID™ Biosystem, along with the VereChip™, is a breakthrough in innovation, integrating two powerful molecular biological technologies: PCR and Microarray.



VereChip™ Lab-on-Chip

VereChip™ is a silicon chip that integrates an ultra-fast miniaturized PCR reactor for amplification of nucleic acids and a customisable microarray. It allows users to apply the full benefits of molecular testing in real-world conditions, at a fraction of the time, cost and complexity needed to operate common lab equipment.

Biosystem Software

The software can provide a highly detailed microarray analysis report for expert users in a central lab or a simple diagnostic report for basic users in a point-of-care setting.

VereID™ Biosystem consists of the following components:

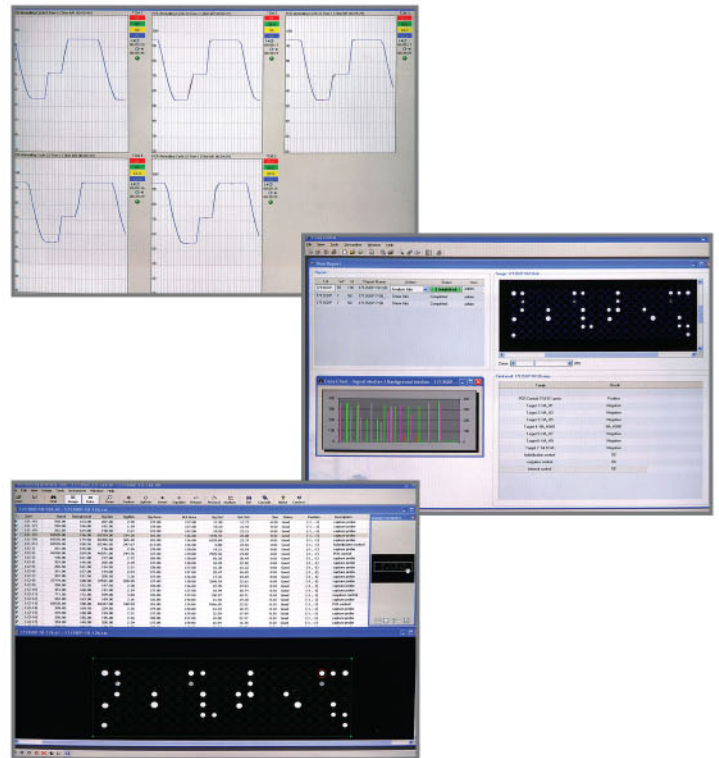
1. Temperature Control System (TCS)
2. Optical Reader
3. Biosystem Software
4. Bar Code Reader

Temperature Control System (TCS)

The Temperature Control System (TCS) is a high precision thermal cycler that drives the VereChip™. The TCS can run up to five different tests and protocols simultaneously or at different points of time without having to wait for all the modules to complete their cycles. It is modular and can be scaled to accommodate the needs of both large diagnostic settings and point-of-care (POC) applications.

Optical Reader

The Optical Reader is a compact instrument that captures and analyzes the microarray in a few seconds. The optimal optics settings are automatically selected and this makes it particularly suited for minimally-trained personnel and point-of-care applications.



Real time temperature monitoring as well as graphical results are available at the user's fingertips.

Specifications

Temperature Control System (TCS)

- Ramping Rates – Heating: typical 40°C/s;
Cooling: typical 10°C/s
- Temperature Resolution: 0.1°C
- Highly conductive material, integrated heaters and temperature sensors allow outstanding control and speed of the PCR temperature cycles, resulting in more specific PCR products in 20-60 minutes
- Communications: Local Area Network/TCP-IP connection
- Size and portability: TCS measures 29cm x 50cm x 14cm and weighs 10 kg

VereChip™

- A 2.54cm x 7.62cm slide present on VereID™ Biosystem provides the necessary mechanical, thermal, electrical and fluidic connections to drive the chip
- The microarray is spotted at semiconductor quality level
- Array Density – up to 500 individual probes
- Superior surface quality (microelectronic grade surface instead of micro-machined glass slide)

Features

- Rapid sample to answer
- Minimal training required to operate
- Scalable with additional Temperature Control System modules
- Samples can be run independently or simultaneously
- Customisable PCR parameters
- 40% faster than conventional thermal cyclers
- Higher specificity due to outstanding annealing temperature precision
- Programmable temperature ramp rate
- Advanced microarray design
- Biosystem software performs automatic microarray grid alignment
- Microarray has optical interference layers resulting in greater sensitivity
- Optical Reader contains high powered LED light source



Biosystem Software



Bio-applications



VereChip™



Optical Reader



Temperature Control System