

GENERAL DESCRIPTION:

The Exicycler 96 is a standard format (96-well), thermal cycler that can be used to perform real-time PCR. The system used a thermal block whose temperature can be controlled, to drive an enzymatic reaction that duplicates DNA. It also contains an optical component that can quantify the amount of DNA in the reaction at a given time. As the amount of DNA increases, the optical sensor can detect this. Software included in the system allow detailed analysis of many



kinds of experiments including: Absolute quantitation, Relative quantitation, SNP analysis, plus/minus assays and more.

TECHNICAL DESCRIPTION:

The Exicycler 96 supports two different reaction chemistries: Probe based chemistries and SYBR[™] Green I double stranded DNA binding dye chemistry. The Exicycler 96 is a real-time thermal cycler that features a patented system of optics that drives the same amount of light to each well ensuring even fluorescent excitation without the need for a background "reference dye". This technology is called Light Tunnel Technology and exclusive to the Exicycler. The thermal cycler itself is driven by a peltier based 96-well block. The Exicycler 96 is a true 5 color system since there is no need for a reference dye, allowing the use of dyes that are well separated in multiplex experiments. The instrument has an a short arc lamp excitation source, and utilizes a 16-bit 2-D charge coupled device (CCD) camera to enable continuous wavelength detection from 520- 680 nm.

CONTACT INFORMATION

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COST

- \$30,000/system
- \$0.50/analysis

Tier Selection



Survey Source

Vendor Supplied Information

Scoring Analysis

System scores are compared across the four scenarios and ranked from highest to lowest.



Impact Chart

The Impact Chart is a spider graph representing specific categories and designed to give the reader a visual depiction of how a particular system is expected to operate across the four different scenarios. The score for each of the seven categories is presented as the percentage of the total possible score. Higher category scores extend the spokes of a graphic toward the outer edge of the chart. The area graphed for each of the four scenarios relates to how well the system performed in that scenario. Graphics for each of the four scenarios are super-imposed for ease of comparison.



Evaluation Criteria

Throughput:

- Between 60 minutes and 8 hours for detection
- Multiple samples, multiple tests/sample per run
- 349-96 samples every 2 hours
- The system could easily be adapted into a fully automated system
- Device or system is intended for multiple detection assays
- 0-1 solutions, buffer, eluents, and/or reagents
- 2 components
- . Less than 5 minutes is required for set-up
- Automatic detection

Logistics:

- An afternoon of training and some technical skills required
- Approximately the size of a toaster
- Between 25 and 50 kg
- Wired connections are available
- System or device has 110V electrical requirement



Operations:

- Can be used from 4 °C to 37 °C
- Components must be stored at room temperature (27 ° C)
- Performance is not influenced by relative humidity
- Between 1 to 3 years shelf life
- Greater than 10 years expected life
- Results can be viewed in real-time
- The system could be adapted to a fully autonomous system with some effort
- The system software is closed and not available for modification
- The system hardware is closed and not available for modification

Detection:

- Possible the system could receive 510K clearance, no current efforts at this time
- Possible the system could receive FDA approval, no current efforts at this time
- Less than 50 µL
- Excellent specificity. System has occasional false alarms under certain conditions (<2%)
- 1-100 CFU per mL
- 1-100 PFU per mL
- Add on capability that is full or semi-automated for spore lysis
 Fully automated spore lysis