

Illumina, Inc. - Eco Real-Time PCR System



GENERAL DESCRIPTION:

The instrument is an integrated system designed to perform real-time PCR. The instrument utilizes a custom plate allowing the researcher to analyze up to 48 samples simultaneously. An intuitive software interface supports all chemistries and real-time PCR applications, including absolute quantification by standard curve, relative quantification with support for multiple reference gene normalization, allelic discrimination by end-point fluorescence and genotyping by High Resolution Melt (HRM) curve analysis.



TECHNICAL DESCRIPTION:

The instrument utilizes an advanced thermal design which incorporates a precisely electroformed hollow silver block that is heated and cooled by a single peltier device. The hermetically sealed hollow block contains a conductive fluid and two opposing agitators driven by electromagnetic motors. During PCR cycling these agitators rapidly circulate the fluid, transferring heat from the peltier quickly and evenly throughout the hollow block. The optical system consists of two panels of 48 fixed LEDs, four emission filters in a linear filter slide, and a high performance CCD camera which detects the fluorescence for each well at each cycle.

CONTACT INFORMATION

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COST

- \$13,900/system
- \$1.07/analysis

Tier Selection

Final tier assignment is based on overall product score.

- Top Tier
- Second Tier
- Third Tier
- ◐ Fourth Tier
- Bottom Tier

RANKINGS

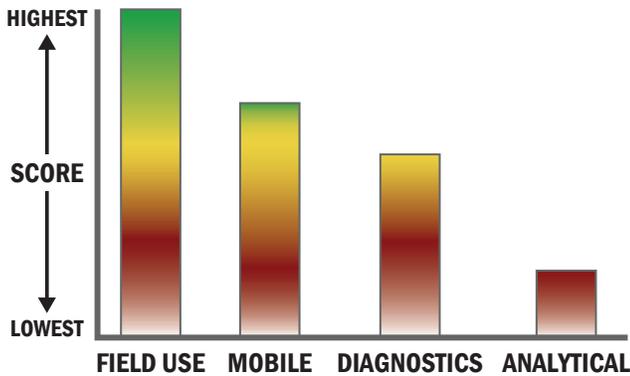
	Biological	Chemical	Radiological
FIELD USE System			
MOBILE Laboratory			
DIAGNOSTIC Laboratory			
ANALYTICAL Laboratory			

Survey Source

Vendor and Internet Supplied Information

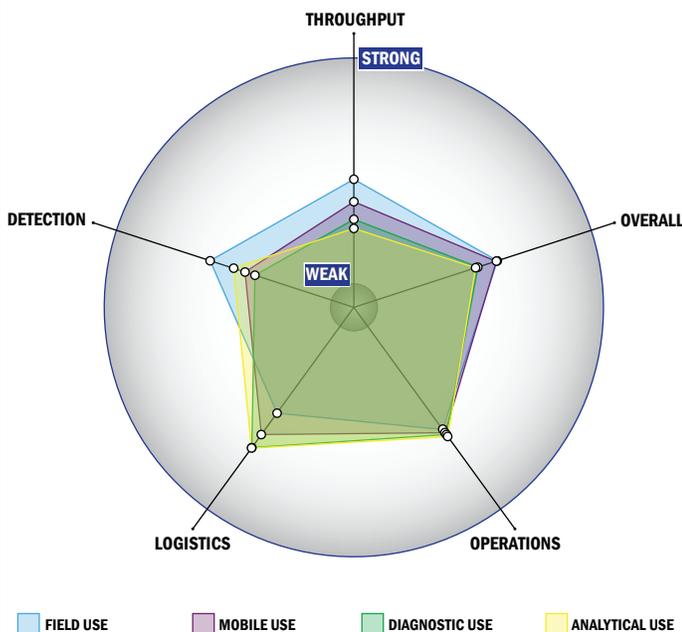
Scoring Analysis

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.



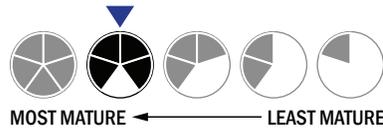
Evaluation Criteria

Throughput:

- Between 60 minutes and 8 hours for detection
- Multiple samples, multiple tests/sample per run
- Less than 32 samples every 2 hours
- The system could be adapted to a semi-automated system with some effort
- Device or system is intended for multiple detection assays
- 2 solutions, buffer, eluents, and/or reagents
- 2 components
- 10-20 minutes is required for set-up
- 3-5 steps are required for detection

Logistics:

- An afternoon of training and some technical skills required
- Approximately the size of a toaster
- Between 5 and 25 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 frozen (-20 °C)
- Performance is not influenced by relative humidity
- Between 6 months and 1 year shelf life
- 5-10 years expected life
- Results can be viewed in real-time
- The system is not capable of autonomy
- The system software is open and available for modification
- The system hardware is open and available for modification

Detection:

- Possible the system could receive 510K clearance, no current efforts at this time
- Not possible for the system to achieve FDA approval
- Less than 10 µL
- Excellent specificity. System has occasional false alarms under certain conditions (<2%)
- 1-100 CFU per mL
- 1-100 PFU per mL
- Manual kit not integrated with the system handles spore lysis

