

# Prognosis, LLC - AIDA: Autonomous Identification Diagnostics and Alert



## GENERAL DESCRIPTION:

The AIDA™ system is comprised of a multiple pathogens and toxins diagnostic strip, a smart telephone for reading, analyzing and telemetry of the results indicated on the diagnostic strip, and a secure (encrypted) web portal for capturing test data, tracking results, prognosis, decision support, and mapping of identified pathogens and toxins anywhere on the globe.



AIDA™ can be used to detect as many as ten pathogens, toxins, chemical threats, and physical conditions (such as temperature, time, and vibration) simultaneously. AIDA™ devices can be configured as qualitative devices or fully quantitative systems with a limit of detection of about 50 ng/mL or 104 CFU, specificity of 95% or better, coefficient of variation of 5% or less, and detection time of less than 10 minutes for all indications on the strip. Prognosis has recently developed multiple pathogen cassettes for *B. anthracis* spores and PA, *C. botulinum* toxin, *Yersenia pestis*, SEB and Ricin, and a number of other diagnostics such as enteric diseases (*V. colerae* O1, O139, *E-coli* O157, *Salmonella*), cardiovascular disease markers (CRP, cTnl, TpP), and a number of kidney disease markers. Developed by Prognosis, LLC as point-of-care diagnostic system, AIDA™ can be used by un-trained individuals at home, in the field, and points of care, without the need for instruments, reagents, and processing. AIDA™ is highly configurable not only for biological threats and medical applications, but also for supply chain tracking and security, tamper detection, and organizational planning and decision support.

## TECHNICAL DESCRIPTION:

Commercially available lateral flow immuno-assays using colloidal gold labeled antibodies, incorporated into barcode diagnostic devices.

## CONTACT INFORMATION

Prognosis, LLC  
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## COST

- \$20-\$40/system
- \$5/analysis

## Tier Selection

Final tier assignment is based on overall product score.

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

### RANKINGS

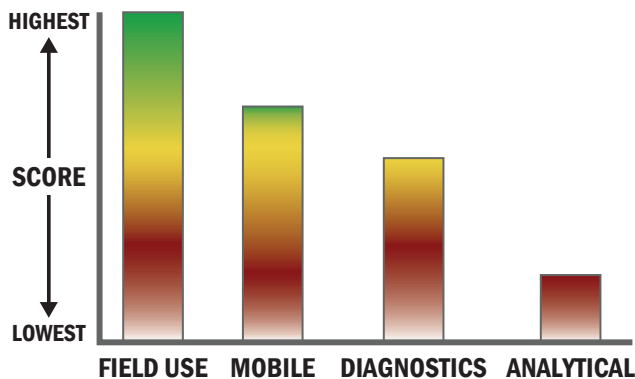
	Biological	Chemical	Radiological
<b>FIELD USE System</b>	●	○	○
<b>MOBILE Laboratory</b>	◐	○	○
<b>DIAGNOSTIC Laboratory</b>	○	○	○
<b>ANALYTICAL Laboratory</b>	◑	○	○

## Survey Source

Vendor and Internet Supplied Information

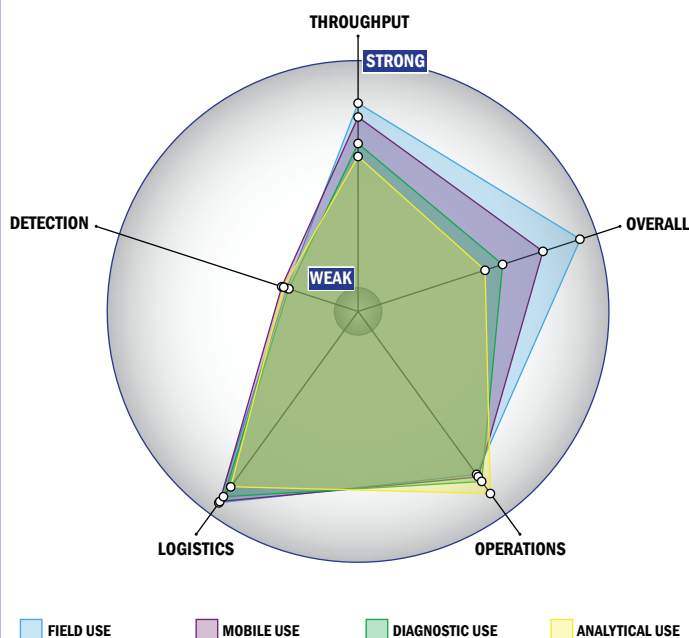
## Scoring Analysis

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.



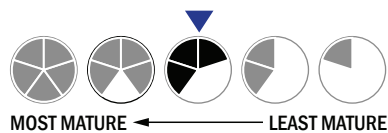
## Evaluation Criteria

### Throughput:

- 2 minutes or less for detection
- 1 sample, >10 tests/sample per run
- 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
- 1 component
- No set-up is required for setup
- 1-2 steps are required for detection

### Logistics:

- An afternoon of training and some technical skills required
- Approximately the size of a soda can
- Less than 1 kg
- Satellite, wireless and wired connections are available
- System or device uses batteries
- 2-4 hours battery life



### Operations:

- Can be used from 4 °C to 41 °C
- Components must be stored at 4 °C
- Device or system has peak performance at normal relative humidity conditions
- Between 1 to 3 years shelf life
- 1-3 years expected life
- Results can be viewed in real-time
- The system could easily be adapted into a fully autonomous system
- The system software is open but modification requires licensing
- The system hardware is open but modification requires licensing

### Detection:

- Possible the system could receive 510K clearance, no current efforts at this time
- Less than 50 µL
- 10,000-100,000 CFU per mL
- 10,000-100,000 PFU per mL
- Greater than 10,000 ng per mL
- Manual kit not integrated with the system handles spore lysis
- > 1x10<sup>-3</sup> mg/m<sup>3</sup>
- 1 ppb - 1 ppm

