

Berkeley Nucleonics Corporation - Model 945 SAM III - Isotope Identifier with Reachback



GENERAL DESCRIPTION:

The new, all-in-one, RIID from Berkeley Nucleonics offers customers a rugged alternative to detachable detectors with a full suite of new features leveraging modern cell phone technology. The renaissance in handheld electronics (Smartphone, PDA, etc.) has led to tremendous advancements in processing power and allows statistical calculations to be processed at a remarkable speed. In parallel, the processors managing the spectral collection and isotope identification can easily handle a myriad of exciting additional user requirements. The long list of much-awaited features ensure new users and experienced health physicists alike will enjoy an unmatched user experience when performing mission critical tasks. PeakAbout, a free app that manages the data and reporting of the SAM 945, boasts a comprehensive library of 115 isotopes with expansion possibility to 393 isotopes.



TECHNICAL DESCRIPTION:

The spectroscopy is a breakthrough in ANSI isotope identification accuracy and speed. Our faster wavelet transform enables instantaneous results with confidence factors that grow exponentially each second. This new algorithm coupled with real-time background correction provides higher sensitivity, rejection of false positives due to changes in background and a linear energy axis. The library is customizable and color coded, with ANSI being the users default.

CONTACT INFORMATION

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San Rafael, CA 94901 U.S.A

COST

- \$13,500/system
- N/A/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	N/A	N/A	●
MOBILE Laboratory	N/A	N/A	●
DIAGNOSTIC Laboratory	N/A	N/A	●
ANALYTICAL Laboratory	N/A	N/A	●

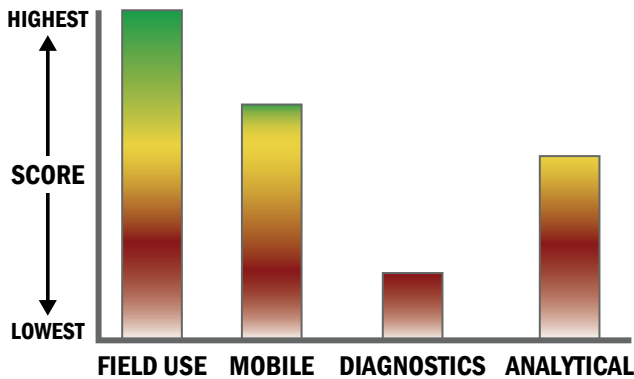
Survey Source

Vendor Supplied Information



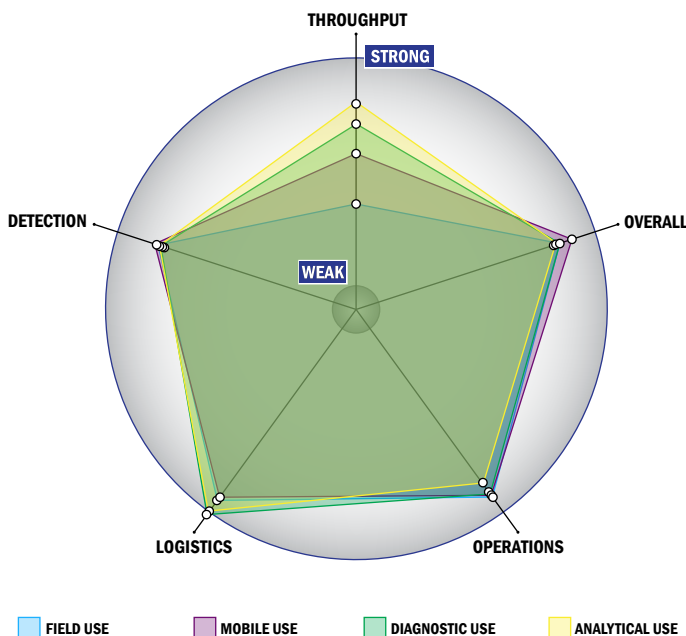
Scoring Analysis

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.



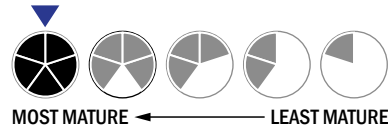
Evaluation Criteria

Throughput:

- Detection is instantaneous
- Multiple samples, multiple tests/sample per run
- System is continuous and provides real time analysis with no defined tests/samples
- The system or device is currently semi-automated
- Device or system is intended for multiple detection assays
- Less than 5 minutes is required for set-up
- 3-5 steps are required for detection

Logistics:

- Very brief (minutes-hours) training and minimal technical skills
- Approximately the size of a toaster
- Between 1 and 5 kg
- Satellite, wireless and wired connections are available
- There is no electrical requirement
- 4-8 hours battery life



Operations:

- Can be used from -21°C to $+42^{\circ}\text{C}$ (All temperatures)
- This system does not require consumable components
- Performance is not influenced by relative humidity
- Greater than 3 years shelf life
- Greater than 10 years expected life
- Results can be viewed in real-time
- The system is not capable of autonomy
- The system software is open but modification requires licensing
- The system hardware is open but modification requires licensing

Detection:

- Not possible for the system to achieve FDA approval
- Superior specificity. System has a false alarm rate approaching zero (~0%)
- Total dose, dose rate and count rate with simultaneous display readout and automatic differentiation between types of radiation detected
- Down to background level radiation for dose rate
- Down to background level radiation for count rate
- System is used for surveying