Environics - RANIDPRO 200 - Portable Radiological and Nuclear Identification, Monitoring and Measuring Unit

GENERAL DESCRIPTION:

RanidPro 200 is a mobile radiation detection, identification, and data collection system. It consists of a rugged laptop computer, a gamma radiation detector and a neutron radiation detector with their associated electronics. Data and analyses may be viewed on-board with the laptop user screen or transmitted digitally/electronically to a remote station. In addition, a mobile telephone or PDA may be used as an additional remote device to control and monitor the system in operation. The RanidPro 200 is designed to be used in the field unnoticeably and it utilizes a conventional rugged laptop computer and smart telephone as easy user interfaces. It may be powered by a variety of AC or DC supplies. The RanidPro 200 system continuously collects, analyzes, and displays radiation information that is acquired by its detectors. All of the collected data is also stored into an on-board database for later review and/or more detailed analyses. The fully integrated system is driven by the RanidPro 200 software which has been specifically developed for ease of use and to provide high quality field spectroscopy, real-time monitoring, and quick efficient data communication with low identification false alarm rates. Although the system is designed to be very easy to use after a short training period by non-technical users it also contains an expert mode including analysis tools for the advanced user. Bluetooth connections between the laptop computer and a smart telephone with graphical interface forms a reliable communication link to, for example, a remote operation center.

TECHNICAL DESCRIPTION:

The RanidPro 200 uses employs quality detectors (Lanthanum Bromide for gamma and Li-6 enriched crystals in a matrix of Zinc Sulfide phosphor for neutrons) to provide high resolution information. These detectors may be exposed to a changing environment during use, which could cause energy calibrations to drift. RanidPro 200 addresses this with continuous internal calibrations. The detector data are analyzed using the software suite specifically developed for the RanidPro 200. The gamma analysis is performed using a hypothesis test, analyzing for specific radionuclides. The device contains an extensive radioisotope energy library and also performs ROI summations and count rate normalization.

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	Fourth Tier
MOBILE Laboratory	N/A	N/A	Fourth Tier
DIAGNOSTIC Laboratory	N/A	N/A	Third Tier
ANALYTICAL Laboratory	N/A	N/A	Fourth Tier

Survey Source

Vendor Supplied Information

CONTACT INFORMATION

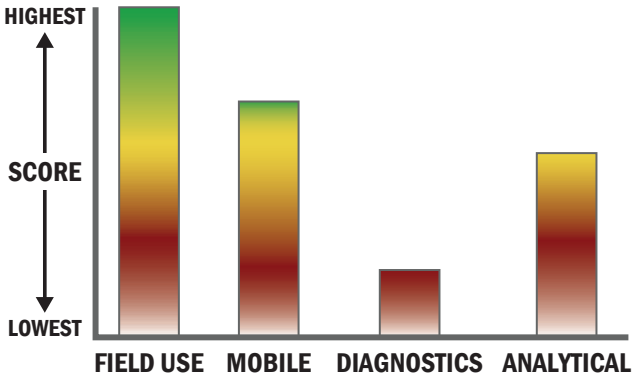
Environics Oy
Graanintie 5, PL 349 50101
Mikkeli Finland

COST

N/A

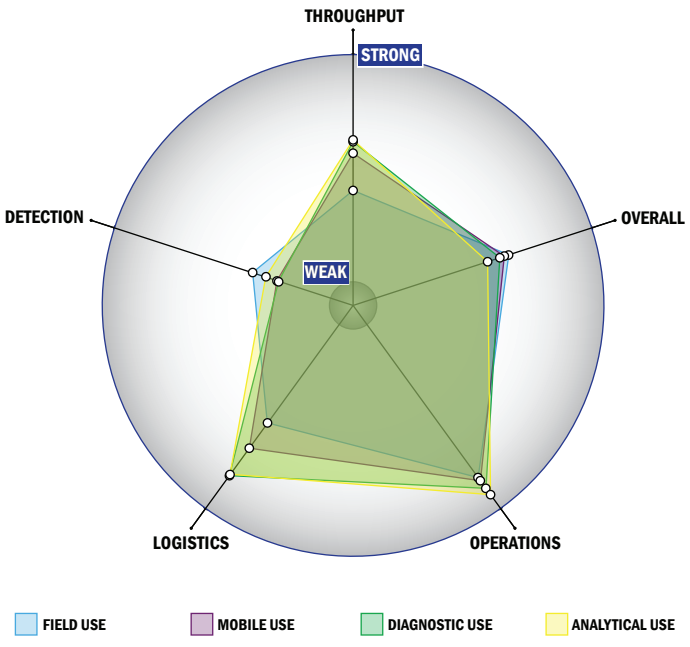
Scoring Analysis

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.



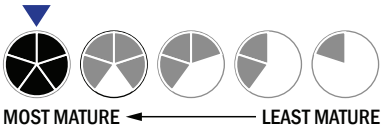
Evaluation Criteria

Throughput:

- 2 minutes or less for detection
- 1 sample, single test/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
- 1-2 steps are required for detection

Logistics:

- Very brief (minutes-hours) training and minimal technical skills
- Approximately the size of a carry-on luggage suitcase
- Between 5 and 25 kg
- Satellite, wireless and wired connections are available
- System or device has a greater than 220V electrical requirement
- 2-4 hours battery life



Operations:

- Can be used from < -21°C to > 42°C (All temperatures)
- Performance is not influenced by relative humidity
- Greater than 10 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 and available for modification
- The system hardware is open and available for modification

Detection:

- Excellent specificity. System has occasional false alarms under certain conditions (<2%)
- 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
- System is used for surveying