

ChemImage Corporation - FALCON II Widefield Raman Chemical Imaging System



GENERAL DESCRIPTION:

The FALCON II Widefield Raman Chemical Imaging System combines the benefits of widefield Chemical Imaging with dispersive Raman spectroscopy. This combination of powerful analytical hardware options and unique, easy-to-use software makes the FALCON II the most versatile and feature-rich Raman microscope platform available.



Analysis with the FALCON II system requires little or no sample preparation and the Raman spectroscopy/Chemical Imaging measurements are compatible with aqueous systems. Nondestructive sample characterization can be performed through glass containers, thin plastic bags or blister packs. Application areas include drug content uniformity, particle size distribution, polymorph characterization, water quality monitoring, cancer research, polymer characterization, and biological and chemical agent detection and identification.

TECHNICAL DESCRIPTION:

Chemical Imaging combines digital imaging and Raman spectroscopy to provide molecular images that reveal material morphology, composition structure and concentration. The FALCON II system can be configured to operate in visible or Raman modes, as well as optional fluorescence or Near Infrared (NIR) absorbance/reflectance capabilities. The FALCON II system consists of three major subsystems all packaged in one convenient unit. The subsystems include an excitement source to provoke material response, imaging optics to acquire sample response information, and an optical detection system with optical filters and cameras to detect high resolution spatial and spectral information.

CONTACT INFORMATION

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COST

- \$300,000/system
- \$0.54/analysis

Tier Selection

Final tier assignment is based on overall product score.

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

RANKINGS

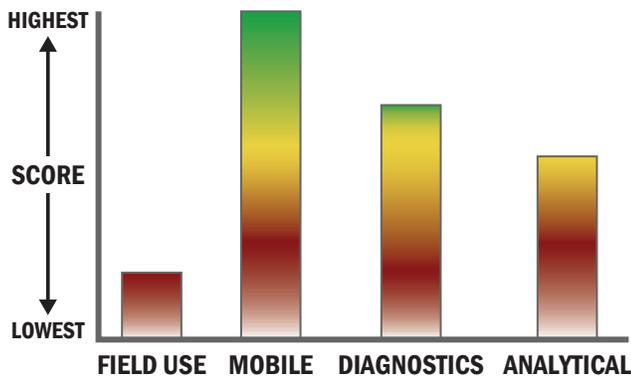
	Biological	Chemical	Radiological
FIELD USE System			
MOBILE Laboratory			
DIAGNOSTIC Laboratory			
ANALYTICAL Laboratory			

Survey Source

Vendor Supplied Information

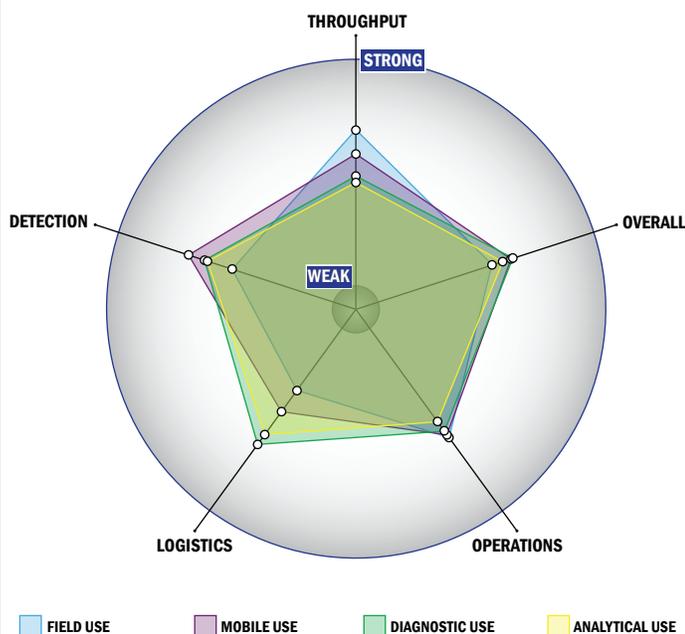
Scoring Analysis

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.



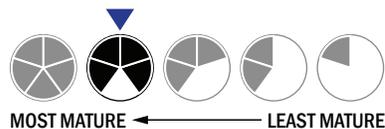
Evaluation Criteria

Throughput:

- Between 2 and 15 minutes 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.
- 0-1 solutions, buffer, eluents, and/or reagents
- 2 components
- 10-20 minutes is required for set-up
- 1-2 steps are required for detection

Logistics:

- A day of training and technical skills are required
- Larger than a home dishwasher
- More than 50 kg
- Wireless and wired connections are available
- System or device has 110V electrical requirement



Operations:

- Can be used from 4 °C to 41 °C
- Components must be stored at room temperature (27 °C)
- 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 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 10 µL
- Good specificity. Consistently low level of false alarms (2-5%) 100-1,000 CFU per mL
- Spore lysis not necessary for detection by system
- > 1 ppt
- System currently can identify aerosolized chemical agent
- System currently can identify liquid chemical agent

