Quant Technologies - NQAD QT-500 Detector

GENERAL DESCRIPTION:

The NQAD is a Universal HPLC detector that can be used in-line with other detectors or as the detector of choice for various HPLC analyses including UHPLC, HPLC, GPC, and SFC. The NQAD line of detectors utilizes water condensation nucleation technology which does not rely on a specific characteristic of the compound to be detected. The detector first nebulizes the HPLC stream then, second, evaporates the mobile phase leaving a dried aerosol particle. Third, water is condensed on the particle to increase its size. Only then is each particle individually counted. At a basic level, the NQAD is a particle counter that works well as a mass counter as well. With a strong separation method, the NQADs high sensitivity, linearity, wide dynamic range and high reproducibility lead to nanogram on column sensitivity. Detection does not rely on a specific characteristic of the compound; therefore, no derivatization is needed. The detector works well with gradient methods, mobile phases of any pH, is linear over 3-4 orders of magnitude and displays a peak reading in real time.

TECHNICAL DESCRIPTION:

The Quant line of NQAD detectors utilizes “Water Condensation Nucleation” technology. This technology has been used in air particle analyzers, which are generally used for clean room analysis and environmental monitoring. In addition, it has been used as a nonvolatile residue monitor that tests the amount of nonvolatile residue in ultrapure water system (crucial in the semiconductor industry). The NQAD line of detectors was created by taking this robust technology and applying it to chromatography.

CONTACT INFORMATION

Quant Technologies
1463 94th Lane NE
Blaine, MN 55449
POC: Melissa Tucker Nelson
763-398-0508
MelissaN@QuantTechnologies.com

COST

- $25,500-$36,500/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

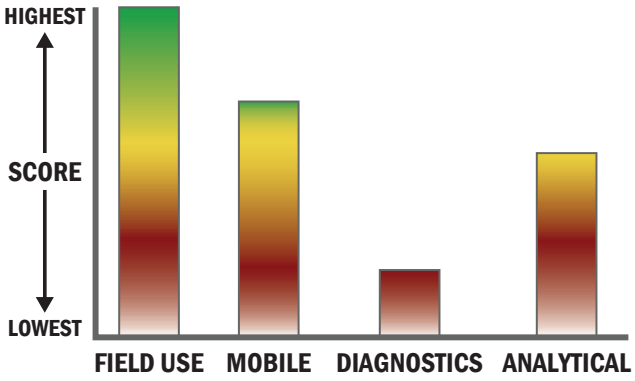
	Biological	Chemical	Radiological
FIELD USE System	N/A	Fourth Tier	N/A
MOBILE Laboratory	N/A	Fourth Tier	N/A
DIAGNOSTIC Laboratory	N/A	Bottom Tier	N/A
ANALYTICAL Laboratory	N/A	Fourth Tier	N/A

Survey Source

Vendor and Internet Supplied Information

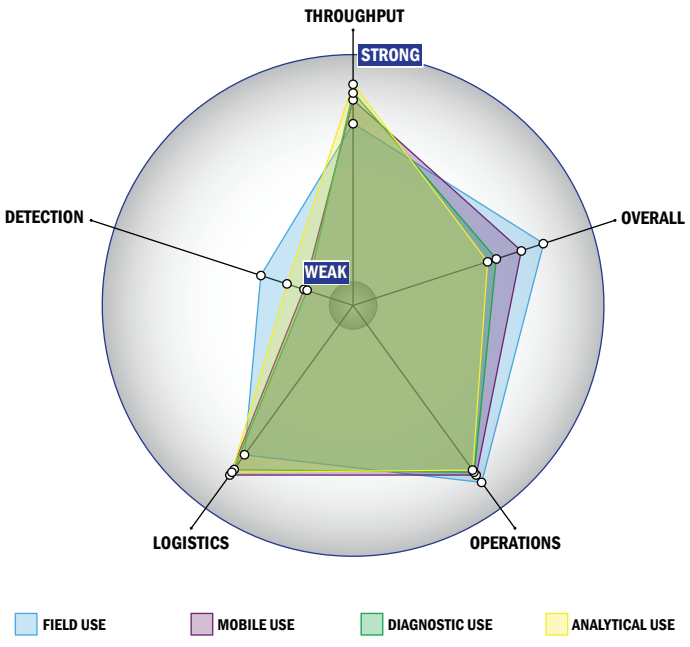
Scoring Analysis

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.



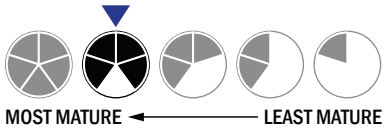
Evaluation Criteria

Throughput:

- 2 minutes or less for detection
- Multiple samples, multiple tests/sample per run
- The system or device is currently fully automated
- Device or system is intended for multiple detection assays
- 2 solutions, buffer, eluents, and/or reagents
- 1 component
- 10-20 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 toaster
- Between 5 and 25 kg
- Wired connections are available
- System or device has 110V electrical requirement



Operations:

- Can be used from 25°C to 37°C
- Components must be stored at room temperature (27°C)
- Performance is not influenced by relative humidity
- Between 1 to 6 months shelf life
- 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 hardware is open but modification requires licensing

Detection:

- Less than 10 µL
- Superior specificity. System has a false alarm rate approaching zero (~0%)
- 1 ppb-1 ppm
- Possible system could identify liquid chemical agent