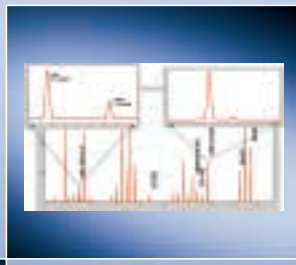
QUANTRA – the high-resolution FT-ICR mass spectrometer



quantra

Ion Cyclotron Resonance Mass Spectrometry provides unparalleled mass resolution. With a mass resolution of 20,000, which is orders of magnitude better than for typical mass spectrometers, the QUANTRA can identify compounds with nearly identical masses. Applications that used to require laborious front-end preparations are now possible with ICR Mass Spectrometry.

SIEMENS

QUANTRA – the high-resolution FT-ICR mass spectrometer

The QUANTRA has a number of other important features that give it an even wider range of applications. For example, the measurement cell can be heated to 250 °C for measuring heavier compounds. Furthermore, the analyzer can be set up with multiple injection valves for such leading-edge techniques as chemical ionization and other types of ion molecule chemistry.

In addition to its amazing analytical performance, the QUANTRA has been designed from the ground up to operate in process environments with minimal maintenance needed. Features include a maintenance-free vacuum system, high-life injection valves, and built-in battery backup for major subsystems.

The QUANTRA Mass Spec is designed to connect to a standard Ethernet system to communicate with a Windows NT workstation. Special, easy-to-use software has been developed to monitor, as well as make changes to, the analysis. Data from each analysis is stored on the workstation in industry standard format for additional processing if desired. Furthermore, multiple QUANTRA analyzers and multiple workstations can easily be networked together over their Ethernet connection.

The new FT-ICR-MS design technology implemented in the QUANTRA mass spectrometer offers new applications in the laboratory and at the process level. The combination of high mass resolution and accuracy, flexibility and the opportunity of providing qualitative and quantitative analysis (new in the case of FT ICR MS) opens up new areas of application. QUANTRA allows reliable identification of process-related key variables, allied with subsequent monitoring during continuous operation.

Using patented technology and state-of-the-art software, the QUANTRA ICR Mass Spectrometer makes MS affordable, practical, and simple. Now, for the first time, the power of Ion Cyclotron Resonance Mass Spectrometry is available for routine on-line measurement applications in a small, robust package.

Technical data

Mass Range: 2–1000 amu

Mass Resolution:
20,000 @ 119 amu

Mass Accuracy:
0.0002 amu @ 28 amu

Mass Repeatability:
0.0015 amu @ 28 amu

Detection Limit: 20 to 50 ppm levels (application dependent)

Measurement Cell

Temperature: 30° to 150 °C

Vacuum Pump: Internal 6.5 kV Ion Pump

Vacuum: 10^{-10} torr

Type of Magnet: Permanent 1-Tesla (nominal) Magnet

Weight: ~150 lbs; (~115 kg)

Power Consumption:
< 700 watts

Hazardous Area Classification:
General Purpose environments

Number of trace components measured simultaneously:
No hardware or software limit

If you have any questions, please contact your local sales representative or any of the contact addresses below.

Siemens AG
A&D PI 2 MS Process Analytics
Oestliche Rheinbrueckenstr. 50
76187 Karlsruhe
Germany
Tel.: +49 721 595 4234
Fax: +49 721 595 6375
E-mail: processanalytics@siemens.com
www.siemens.com/prozessanalytik

Siemens Applied Automation
500 West Highway 60
Bartlesville, OK 74003
USA
Tel.: +1 918 662 7000
Fax: +1 918 662 7052
E-mail: saaisales@sea.siemens.com
www.sea.siemens.com/ia

Siemens Pte. Limited
A&D PI 2 Regional Headquarters
The Siemens Center
60 MacPherson Road
Singapore 348615
Tel.: +65 6490 8702
Fax: +65 6490 8703
E-mail: splanalytics.sgp@siemens.com
www.siemens.com/processanalytics

Siemens AG
Automation and Drives (A&D)
Process Instrumentation and Analytics
D-76181 Karlsruhe
www.prozessanalytik.com

Order No. E20001-A50-P720-V1-7600
Printed in Germany
DISPO 27902
41C8741 PI.P2.ALLG.52.4.03 SB 08043.0