

Quantitative Spectrometer



Article Overview

A full-quantitative spectrometer is an analytical instrument designed to measure absolute concentrations of compounds across a broad range of wavelengths or mass-to-charge ratios with high precision and accuracy.

Definition and Function

A full-quantitative spectrometer is a type of spectrometer optimized for comprehensive quantitative analysis, meaning it can determine the absolute concentrations of multiple analytes in a sample rather than just relative or qualitative measurements. Unlike standard spectrometers that may only provide relative absorbance or intensity, a full-quantitative spectrometer uses calibration standards, optimized acquisition parameters, and precise detection methods to deliver accurate, reproducible quantitative data .

Types and Applications

- **Mass Spectrometry-Based Quantitative Spectrometers** Instruments like triple quadrupole mass spectrometers (e.g., TSQ Quantis Plus) perform full-quantitative analysis by combining MS/MS fragmentation with targeted monitoring of parent and fragment ions. This allows for high specificity and sensitivity, even in complex biological matrices, enabling absolute quantitation of small molecules, peptides, or proteins .
- **Spectrophotometry-Based Quantitative Spectrometers** In optical spectrophotometry, full-quantitative spectrometers measure light absorption or transmission across a wide wavelength range. By using calibrated standards and controlling spectral bandwidth, these instruments can determine the exact concentr...

Article Content

Dec 16, 2025

Quantitative ¹H NMR spectroscopy

This review illustrates the need to use nuclear magnetic resonance (NMR) spectroscopy for the quantitative analysis of

Dec 02, 2025

Quantitative mass spectrometry imaging of drugs and ...

Mass spectrometry imaging (MSI) provides insight into the molecular distribution of a broad range of compounds and,

Jun 05, 2026

Quantitative Analysis in Spectroscopy

Discover the ultimate guide to quantitative analysis in spectroscopy, covering principles, techniques, and applications

Mar 13, 2026

MassHunter Quantitative Analysis Software, lcms, gcms

Mass spectrometry quantitative analysis software for routine, high-throughput, and profiling workflows.

Mar 08, 2026

Journal of Quantitative Spectroscopy and Radiative Transfer

Read the latest articles of Journal of Quantitative Spectroscopy and Radiative Transfer at ScienceDirect , Elsevier's leading

Sep 04, 2025

EISCO Premium Quantitative Spectroscope

EISCO Premium Quantitative Spectroscope - 400-700nm Range, 5nm Accuracy - for Studying Light Sources, Measuring

May 19, 2026

Photometrische Messungen, Spectroquant®-System | Analytik und

Instrumentelle Testsysteme für quantitative Analysen> Photometrische Messungen, Spectroquant-System Photometrische

Aug 17, 2025

Quantitative mass spectrometry in proteomics: a critical review

The quantification of differences between two or more physiological states of a biological system is among the most

Jul 22, 2026

Spectrophotometry

Spectrophotometry is a tool that hinges on the quantitative analysis of molecules depending on how much

Aug 30, 2025

Quantifying Small Molecules by Mass Spectrometry

In quantitative mass spectrometry, because the response of a mass spectrometer fluctuates with time and also as a

Dec 08, 2025

Mass spectrometry

Mass spectrometry (MS) is an analytical technique that is used to measure the mass-to-charge ratio of

Aug 06, 2025

Carefully Count Your Ions! A Guide to Direct Quantitation with Mass ...

This tutorial is intended as an educational resource covering the application of mass spectrometry (MS) to quantitative

Oct 01, 2025

A practical approach to quantitative analytical surface-enhanced

1. Introduction Surface-enhanced Raman spectroscopy (SERS) is a vibrational spectroscopic technique that exploits

May 24, 2026

Quantitative analysis of bio-molecules in single cells by mass ...

Abstract Quantitative analysis of bio-molecules in single cells offers a direct and precise way for us to understand cell

Nov 06, 2025

Quantitative Analysis in Spectroscopy

Quantitative analysis in spectroscopy is a powerful tool for determining the concentration or amount of a specific

Feb 15, 2026

Quantitative analysis (chemistry)

In analytical chemistry, quantitative analysis is the determination of the absolute or relative abundance (often expressed as a

Apr 18, 2026

TSQ Quantis Plus Triple Quadrupole Mass Spectrometer

The TSQ Quantis Plus mass spectrometer delivers excellent quantitative performance in both selected reaction monitoring (SRM)

Oct 29, 2025

Quantitative Proteomics

Learn why and how scientists are using our mass spectrometers and their robust, complementary products for quantitative

Jul 19, 2026

Mass spectrometry-based metabolomics: a guide for annotation ...

Mass spectrometry-based metabolomics approaches can enable detection and quantification of many thousands of

Nov 04, 2025

Quantitative Spectroscopy: Theory and Practice

The purpose of this book is to give readers, without an advanced math background, a thorough grounding in the theory

Apr 02, 2026

Quantitative NMR Spectroscopy

Specific parameter sets are available on the spectrometers for quantitative experiments. Please speak to the NMR staff if you require

Contact Us

For more information, pricing, or custom solutions, please contact us:

Website: <https://greatpremiersolutions.co.za>

Email: sales@greatpremiersolutions.co.za

Phone: +27 82 914 3675

Address: Unit 5, Silicon Heights, 22 Electron Avenue, Cape Town, 8001, South Africa

This document is for informational purposes only. Specifications subject to change without notice.

