

Article Overview

Spectrometer components and systems range from a few hundred dollars for basic optical elements to over \$2 million for high-end mass spectrometers.

Optical Spectrometer Components

Optical spectrometers include UV-VIS, NIR, Raman, and fluorescence systems, and their components vary widely in price depending on complexity and application . Key components and approximate costs include:

- o Detectors: CCD or CMOS detectors for UV-VIS or NIR spectrometers can range from \$500 to \$5,000 depending on resolution and sensitivity .
- o Gratings and Filters: Optical gratings and interference filters typically cost \$200 to \$2,000 each, depending on wavelength range and quality .
- o Fiber Optics and Cables: Fiber optic cables for light delivery or collection range from \$100 to \$1,000 per meter, with specialized NIR or UV fibers at the higher end .
- o Light Sources: Tungsten, deuterium, or LED sources for spectrometers can cost \$300 to \$3,000, with pre-calibrated NIST-traceable sources at the higher end .
- o Calibration Standards: Reflectance or radiometric standards typically cost \$100 to \$1,000 depending on precision and traceability . Preconfigured optical systems, such as LED measurement setups or Raman spectrometers, can range from \$5,000 to \$50,000 for portable or laboratory-grade systems .

Mass Spectrometer Systems

Mass spectrometers are significantly more expensive due to their complexity and high-resolution capabilities :

- o Entry-level benchtop systems: Quadrupole or ion trap instruments start around \$50,000 to \$150,000.
- o Mid-range systems: Time-of-flight (TOF) or hybrid Q-TOF instruments typically cost \$200,000 to \$500,000.
- o High-end systems: Orbitrap or Fourier transform ion cyclotron resonance (FT-ICR) instruments range from \$400,000 to over \$2,500,000, depending on resolution and sensitivity . Used or refurbished mass spectrometers can reduce costs by 30-70%, with prices for used ion traps starting around \$10,000 and used FT-ICR systems around \$100,000 to \$1,500,000 .

Additional Considerations

- o Software and Service Contracts: Many spectrometer systems require proprietary software and maintenance contracts, which can add \$5,000 to \$50,000 annually for high-end instruments .
- o Consumables: Gas cylinders, solvents, and sample preparation kits for mass spectrometry can add

Prices of Spectrometer Parts

\$1,000-\$10,000 per year depending on usage .

o Customization: Modular optical systems allow for tailored configurations, which can increase costs but provide flexibility for specific research or industrial applications . Overall, budgeting for spectrometer components requires considering both initial purchase costs and ongoing operational expenses, with optical systems generally being more affordable than high-resolution mass spectrometers.

General Spectrometer Accessories Replacement parts, enhancements, and other accessories designed to supplement

Get the best deals on Spectrometers & Spectrophotometers when you shop the largest online selection at

Get the best deals on Optical Spectrometers when you shop the largest online selection at eBay.com. Free shipping on many items |

How much does a mass spectrometer cost? Explore price ranges, key factors, and what labs should budget for

Information and reports on Parts Of Spectrometer Imports Under Sub Chapter 8544 along with detailed shipment data, import price,

The Thermo Scientific Instrument Parts and Accessories e-Store features products for our scientific instruments, spanning

These accessories supplement the function of spectrophotometers, replace worn parts such as power cords and lamps, and carry

Parts & Accessories All required accessories for your process FDM series Shop Products

Browse a full range of Spectrophotometer Accessories and Replacement Parts products from leading suppliers. Shop now at Fisher

Find spectrometer parts and related products for scientific research at MilliporeSigma

Prices for new atomic absorption spectrometers typically range from \$20,000 to \$150,000, depending on the model, detection

Information and reports on Spectrometer Parts Imports Under HS Code 90330000 along with detailed shipment data, import price,

Buy new and used mass spectrometers on LabX. Auctions for Mass Specs and analytical instruments. GC-MS,



Prices of Spectrometer Parts

LC-MS, Ion Trap,

Spare Parts and Consumables SUBCATEGORIES Product line · SPECTRO XEPOS Product line · SPECTRO MIDEX

Genuine parts: When you purchase consumables and spares directly from SPECTRO, you can be sure

Visit the SPECTRO Webshop to browse our extensive parts catalog, featuring high-quality components and accessories for your

Web: <https://www.millstraining.co.za>

