

Portable Mass Spectrometry

Product Catalog



Don't wait for answers

Get them with **BaySpec's** Field Portable Mass Spectrometers

Tiny Instruments with Infinite Possibilities



Miniature mass spectrometers are transforming the landscape of analytical chemistry by enabling high-precision, on-site chemical analysis, bringing the capabilities of a fully equipped laboratory directly to the field.

Our innovative product line leverages atmospheric pressure ionization sources and advanced miniature linear ion trap technology, ensuring that these compact instruments deliver uncompromised performance and portability. Versatile and user-friendly, they excel in diverse environments—from rugged fieldwork to controlled laboratory settings—making them ideal for a wide range of applications in chemical and biological analysis.

Portable, Practical, Powerful

By facilitating on-site analysis, our mass spectrometers offer immediate, actionable detection of trace-level compounds in real-time, which is crucial for time-sensitive situations such as environmental monitoring, forensic investigations, and public safety scenarios. This capability not only enhances the accuracy and relevance of the data by analyzing substances in their native states but also significantly reduces the costs and logistical burdens associated with sample transport and laboratory analysis.

Equipped with a range of ionization sources—including APCI, ESI, APPI, customized options and more—our instruments provide extensive analyte coverage and adaptability to handle complex chemical matrices. They deliver high-resolution, precise quantification across diverse samples. The modular design supports quick and easy changes to the ionization source, efficient and sophisticated field analyses without the limitations of traditional lab equipment.

Novel Portable Mass Spectrometry Solutions

Explore our range of advanced linear ion trap mass spectrometers. All models operate in both positive and negative modes, have data MS/MS, spectral library matching capabilities, and can be controlled remotely. Each model boasts extensive customization options, such as the inclusion of a GPS unit to geotag spectral data. This vast array of possibilities ensures that your only limit is your imagination!

Continuity™ Series

Our most high-performance mass spectrometer, offering the highest sensitivity and the broadest mass range available. Designed for precision and adaptability, **Continuity™** allows users to seamlessly interchange any of our ionization sources, catering to diverse analytical needs. This flagship model features a touchscreen user interface for intuitive control and supports continuous atmospheric sampling. Ideal for demanding research environments requiring the utmost in accuracy and versatility.

Continuity™

Detection Limit: High parts-per-trillion/picograms

Mass Ranges: m/z 25 — 300
 m/z 40 — 500
 m/z 80 — 1000
 m/z 150 — 1500

Mass Resolution: Unit

Weight: 18 kg (39 lbs.)

Size: 47.0 x 37.1 x 40.0 cm
(18.5" x 14.6" x 15.7")

Power: 100-240 V_{AC} 50/60 Hz
or 24 V_{DC}, 200 W



Portability™ Series

Our **Portability™** series mass spectrometers offer the same user-friendly touchscreen interface and ion source interchangeability as our **Continuity™** systems, but in a more compact and lightweight design. This model employs pulsed atmospheric sampling and can be set up in less than 5 minutes, providing a practical solution for situations where rapid deployment is essential. Ideal for fieldwork and applications requiring a high degree of mobility and versatility.

Portability™

Detection Limit: Low parts-per-billion/nanograms

Mass Ranges: m/z 40 — 500
 m/z 80 — 1000

Mass Resolution: Unit

Weight: 10 kg (22 lbs.)

Size: 36.8 cm x 33 cm x 22.9 cm
(14.5" x 13.0" x 9.0")

Power: 100-240 V_{AC} 50/60 Hz
or 24 V_{DC}, 110 W

Agility™ Series

The epitome of streamlined mass spectrometry, **Agility™** offers the same performance as our **Portability™** series instruments, but with the lowest size, weight, and power (SWaP) specifications in our lineup. This makes it exceptionally suited for scenarios where minimal footprint and maximum mobility are paramount. Each system is optimized for specific analytical tasks, offering custom specifications tailored to meet unique requirements.



Agility™

Detection Limit: Low parts-per-billion/nanograms

Mass Range: m/z 40 — 500
 m/z 80 — 1000

Mass Resolution: Unit

Weight: 7 kg (15 lbs.)

Size: 22.1 x 25.4 x 32.5 cm
(8.7" x 10.0" x 12.8")

Average Power: 100-240 V_{AC} 50/60 Hz
or 24 V_{DC}, 80 W

Ionization Sources

Modular Versatility Meets Specialized Needs:

Precision Ionization at Atmospheric Pressure

Discover the largest selection of interchangeable ionization sources available, constantly innovating to meet specific applications and diverse needs of our growing customer base.

Ionization Options	Description	
	ElectroSpray Ionization (ESI)	Ideal for analyzing non-volatile and thermally labile molecules like proteins and peptides. It generates single and multiply charged ions in positive and negative modes, operates efficiently at low flow rates, and integrates seamlessly with liquid chromatography systems. Features an optional thermal desorber for converting solid or liquid samples into vapors.
	Atmospheric Pressure Chemical Ionization (APCI)	Well-suited for less polar and some nonpolar molecules, generating primarily singly charged ions. APCI operates effectively without auxiliary gas and offers adjustable probe tip positioning for maximum sensitivity, supporting both positive and negative ion modes.
	Swab-APCI	Designed for TSA-approved swabs, converting solid samples like drugs and explosives on swabs into vapors via a heater unit, then drawing them into the ionization chamber.
	Air Monitoring-APCI (AM-APCI)	A small sampling pump continuously draws air into the ionization chamber, where a corona discharge ionizes compounds of varying polarities, making it ideal for analyzing VOCs in buildings or urban environments.

Ionization Options

Description



Dielectric Barrier Discharge Ionization (DBDI)

Versatile plasma-based ion source designed for analyzing small molecules with low to high polarity. This soft ionization technique minimizes in-source fragmentation and requires no auxiliary gas supply, making it best suited for vapor and gas samples. An optional thermal desorber enhances the sample coverage.



Multimodal Ionization

Combined plasma-based and corona discharge-based ionization, allowing for a greater coverage of analytes. This patented technology improves ion generation and reducing noise. Can be operated in combined, DBDI only, or APCI only mode, offering versatility for different analytical needs. It is best suited for the analysis of vapor and gas samples but an optional thermal desorber extends its capabilities to solid and liquid samples.



Photolionization (PI)

Uses high-intensity, low-energy UV photons to ionize analytes, reducing chemical noise as common solvents and air components remain non-ionized. It is particularly effective for molecules such as pesticides and steroids with lower ionization energies. No auxiliary gas is needed, and a thermal desorber can be used to process solid or liquid samples.



Customized Solutions

For applications requiring specialized solutions, we provide custom ionization sources designed to meet specific experimental and industrial demands. Our expert team develops bespoke modules that enhance your analytical capabilities, ensuring optimal performance and precise, targeted investigations for a variety of sample types, whether you're expanding your current setup or integrating into new equipment..



MALDI-2 Ionization

A soft ionization technique reduces fragmentation of large molecules. Significantly increased sensitivity compared to traditional MALDI. Equipped with two fast solid-state miniature Nd-YAG lasers operating at 266 nm, it offers up to 5 µm spatial resolution, enabling MALDI Imaging as well as polymer analysis, biomarker discovery, and proteomics studies. The system features adaptable ion optics, allowing for the best MALDI sensitivity in MS and MS/MS modes.



We Support You!

Expert Care for Your Instruments,

Expert Results for Your Research.

Our dedicated support team ensures your mass spectrometers operate at peak performance with regular servicing and prompt repairs. We collaborate closely to optimize applications for reliable data acquisition. Beyond addressing immediate needs, our comprehensive support services include ongoing maintenance and expert assistance to enhance your instrument's longevity and productivity. Trust us to maintain not just your equipment, but the excellence of your research.



Quality Management System
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Sales/General Information: sales@bayspec.com
Technical Support: support@bayspec.com

BaySpec, Inc. 1101 McKay Drive | San Jose, CA 95131 | (408) 512-5928 | www.bayspec.com

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