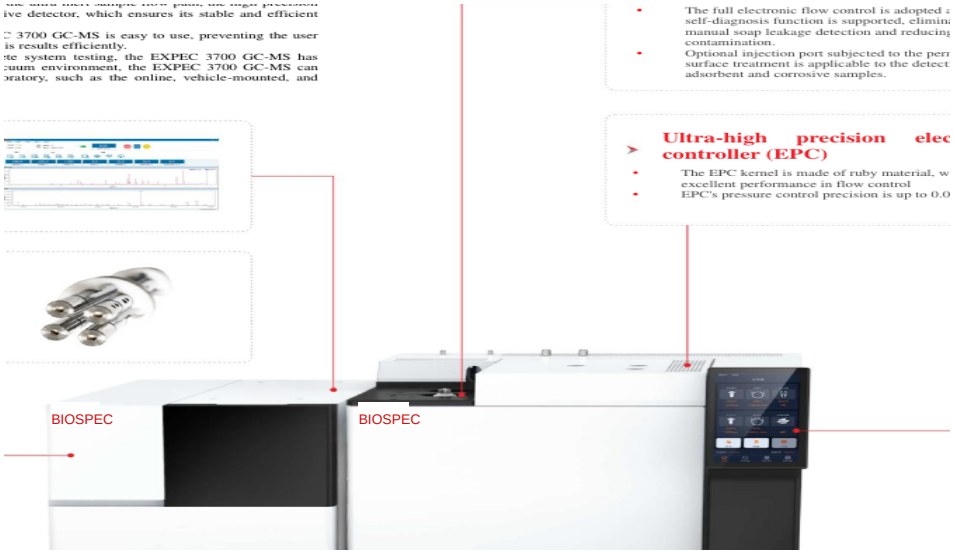
BIOSPEC 3700 GC-MS

Gas Chromatography–Quadrupole Mass Spectrometer



Stable. Efficient. High-End Analysis.

A laboratory bench-top GC-MS platform developed around an ultra-inert sample flow path, high-precision gas-path control, an analytical quadrupole and a durable, highly sensitive detector. The supplied source brochure positions the BIOSPEC 3700 for efficient, reliable analysis while retaining familiar workstation operation.

Designed around the analyst

Classic software and hardware operating habits reduce the need for re-learning, while batch processing supports automatic statistical analysis and sample trend visualization.

0.001 psi EPC pressure-control precision	8-inch 1280 × 720 color touch display	Triple off-axis ion path before electron multiplier	16 / 110 / 150 automatic liquid-sampler positions

The BIOSPEC 3700 combines analytical sensitivity, contamination-conscious flow-path design and flexible sampling options in a platform intended to support laboratory research as well as specialized online and vehicle-mounted scenarios.

Core Technology Platform

The supplied technical material highlights five engineering areas that define the BIOSPEC 3700 GC-MS architecture: inert sample handling, precision flow control, quadrupole analysis, detector durability and intuitive user interaction.

Ultra-Inert Sample Flow Path A full-flow-path inertization approach is described for challenging samples. An optional permanently super-inert injection-port surface is intended for highly adsorptive and corrosive samples.	Self-Developed Analytical Quadrupole The all-metal main quadrupole is paired with a pre-quadrupole. The design is described as shielding the mass analyzer from contamination and reducing fringing-field effects at the ion-source outlet.
Durable, Sensitive Detector A triple off-axis ion trajectory helps shield neutral interference before ions reach the electron multiplier, reducing baseline noise. The durable multiplier is designed to reduce operating cost.	Ultra-Stable Injection Port Full electronic flow control and self-diagnosis reduce the need for manual soap-leak testing and help lower contamination risk.
High-Precision EPC The electronic pressure controller uses a ruby EPC kernel and provides pressure-control precision up to 0.001 psi.	Intuitive Human–Machine Interface An Android-based operating environment, skeuomorphic graphical interface and 8-inch 1280 × 720 capacitive touch display provide clear monitoring and direct control.

Workflow continuity

The source brochure specifically notes inheritance of classic workstation operation habits. Batch processing can automatically perform statistical analysis of sample data and generate trend charts, helping laboratories move from acquisition to interpretation with fewer workflow interruptions.

Flexible Sampling & Accessory Ecosystem

The BIOSPEC 3700 is presented as a modular analytical platform with multiple sampling configurations. The available options are intended to match throughput, sample matrix and injection mode without changing the core GC-MS architecture.

Automatic Liquid Sampler 16, 110 or 150 sample positions; supports dual-tower simultaneous injection.	Multifunctional Sampler Supports liquid, headspace and solid-phase microextraction modes, including automatic SPME fiber aging.	Automatic Air Bag Sampler 30-position high-throughput air-bag or syringe sampling; direct gas injection or injection after enrichment/thickening is supported.
Automatic Headspace Sampler 75 positions for high-throughput samples and 12 simultaneous heating positions; urgent samples can receive priority injection.	Atmospheric Preconcentration Sampler Samples can be cooled to -160°C without consuming liquid nitrogen; sampling, multi-position sampling, tank cleaning, standards and related accessories are provided.	Heart-Cutting Accessories Locally co-distilled chromatographic peaks can be further separated on a second column with different polarity; constant-flow analysis is supported for Column 1 and Column 2.



Accessory selection can therefore be matched to sample throughput and introduction requirements—from routine liquid analysis to headspace, SPME, air-bag sampling, atmospheric preconcentration and two-column heart-cutting workflows.

Multi-Scenario Deployment

Beyond conventional laboratory operation, the source brochure describes the BIOSPEC 3700 as adaptable to online, vehicle-mounted and other end-analysis scenarios. The emphasis is on mechanical stability, rapid vacuum creation and familiar analytical operation.

Laboratory use

The bench-top configuration is designed around stable sample handling, high-precision gas-path control and an integrated quadrupole mass analyzer. Familiar workstation operation is intended to keep routine analysis straightforward.

Vehicle-mounted analysis

The source material highlights an anti-seismic design intended to reduce the influence of vehicle bumps on analytical results. An ultra-efficient vacuum environment can be created for immediate measurement after parking.

Fast readiness

Rapid creation of the vacuum environment is presented as a practical advantage where measurement time is critical, particularly in mobile deployments.

Design philosophy

Reliable materials, structural design and complete system testing are described as supporting mobility and dependable operation across diversified deployment scenarios.

One platform, multiple workflows

Sampling accessories can be combined with the core GC-MS platform to extend its utility across liquid, headspace, gas-bag, preconcentration and heart-cutting applications.

APPLICATION-READY ARCHITECTURE
Analytical core + precision EPC + inert sample path + modular sampling + specialized accessories

This combination allows the same GC-MS platform to be configured around different sample types, throughput levels and deployment environments, while retaining the same core analytical system.

The source brochure explicitly identifies laboratory and vehicle-mounted scenarios; the following application areas are reproduced from its supplied application section.

Application Areas

The supplied material illustrates how the BIOSPEC 3700 can support analytical work across environmental, food, materials and forensic contexts. The descriptions below retain the source brochure's stated use cases and performance claims.

Environmental Analysis

Odorants in drinking water

The source states that BIOSPEC 3700 GC-MS and related solutions can analyze trace odorants in water at ppt or even sub-ppt levels and cites GB 5749 as a reference requirement.

Food & Flavor Analysis

Flavor composition and authenticity

An integrated flavor excitation and introduction system is described for reproducing complex aroma compositions through chromatography and mass spectrometry, supporting investigation of characteristic flavor chemistry.

Materials Analysis

Plasticizers in plastics

The source highlights anti-contamination design, selected system materials and optimized ionization efficiency to address blank, linearity and reproducibility challenges in plasticizer analysis.

Forensic Analysis

Drugs, poisons and related compounds

Full-flow-path inertization is described as a way to reduce the influence of reactive analytes on peak shape and sensitivity, supporting stable analysis of drugs, poisons and related metabolites.

Representative analytical examples shown in the supplied brochure include ethyl acetate, acetic acid, ethyl lactate and geosmin, together with chromatograms associated with e-cigarette illegal additives and synthetic cannabinoid analysis.

Important source note: The supplied two-page brochure does not provide a complete numerical specification table for the GC-MS system. This BioSpectrix brochure therefore does not invent additional specifications; only values and capabilities explicitly stated in the source are presented.

Technical Highlights at a Glance

A concise reference of the principal specifications and capabilities explicitly stated in the supplied BIOSPEC 3700 brochure.

Parameter	Source-stated specification / capability
System type	Laboratory bench-top gas chromatography–quadrupole mass spectrometer (GC-MS).
Pressure control	Electronic pressure controller (EPC) with pressure-control precision up to 0.001 psi.
Display	8-inch color screen; 1280 × 720 RGB resolution; capacitive full-touch operation.
Operating interface	Android smart operating system with skeuomorphic graphical user interface.
Quadrupole	Self-developed all-metal main quadrupole with pre-quadrupole; designed to limit contamination and fringing-field effects.
Detector	Electron multiplier with triple off-axis ion trajectory arrangement for reduced neutral interference and baseline noise.
Injection port	Full electronic flow control with self-diagnosis; optional permanently super-inert surface treatment.
Liquid sampler	16-, 110- or 150-position configurations; dual-tower simultaneous injection supported.
Headspace sampler	75 sample waiting positions and 12 simultaneous sample-heating positions.
Air-bag sampler	30-position high-throughput air-bag or syringe sampling.
Atmospheric preconcentration	Cooling to -160°C without liquid-nitrogen consumption.
Heart-cutting	Second-column separation for locally co-distilled chromatographic peaks; constant-flow analysis for both columns.
Mobile deployment	Anti-seismic design for vehicle mounting; rapid vacuum creation for measurement after parking.

BioSpectrix positioning

BioSpectrix can present the BIOSPEC 3700 as a flexible analytical platform for laboratories requiring a combination of inert sample handling, precise gas-path control, quadrupole mass analysis, durable detection and modular sampling. Product configuration should be finalized against the customer's sample matrix, throughput and deployment requirements.

Source basis: BIOSPEC 3700 GC-MS brochure supplied in this conversation. Product name and technical claims are retained from the supplied material; BioSpectrix branding and layout have been added for presentation.