BioSpectrix

Precision Instruments for a Healthier and Safer World

LC3500

Ultra-High Performance Liquid Chromatography Solution

High Sensitivity | High Reliability | Regulatory Ready

- Robust and Stable Performance
- Excellent Separation Capability
- Flexible Configuration
- Compliance Ready
- User-Friendly Software

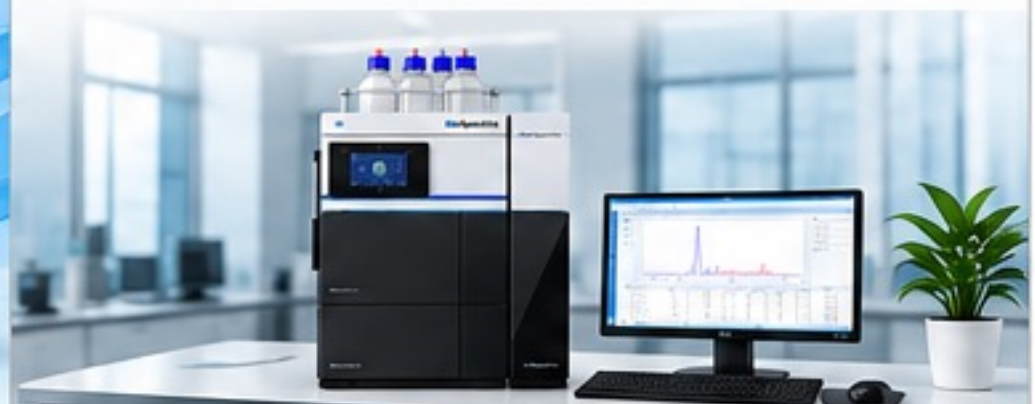


System Overview

Engineered for Demanding Analytical Workflows

The BioSpectrix LC3500 Ultra-High Performance Liquid Chromatography (UHPLC) system is designed to deliver exceptional performance, reliability, and flexibility for a wide range of analytical applications. Built with advanced engineering and innovative technologies, the LC3500 provides high sensitivity, excellent separation capability and robust performance for routine analysis and advanced research.

- **Ultra-high Pressure** Up to 145 MPa
- **High Sensitivity** and Accuracy
- **Outstanding** Separation Performance
- **Robust and Reliable** 24/7 operation
- **Modular Design** Flexible configuration for diverse applications
- **Regulatory Compliance** Meets GMP, CGMP, 21 CFR Part 11 and ICH



Smart Lab Software

Powerful, Compliant and User-Friendly

The LC3500 is equipped with intelligent chromatography software designed for efficient data acquisition, processing and compliance. The software supports multi-instrument control, data integrity, audit trails and electronic signatures, making it suitable for regulated environments.



- Instrument control and method management
- Data analysis and report generation
- Multi-level user permission management
- Audit trail (immutable, non-deletable)
- Database backup and data security
- Compliant with GMP, CGMP, 21 CFR Part 11 and ICH guidelines

Supported Detectors

Supports network deployment with expandable interfaces for UV, DAD, FLD, ELSD, RID, MS and other detectors. Full control over multi-brand, multi-model instruments provides scalability for future laboratory expansion.

Technical Specifications

Item	Specification
High-Pressure Pump	
Maximum operating pressure	145 MPa
Flow setting range	0 - 10 mL/min
Flow stability	≤ 0.1% RSD
Composition accuracy	±0.5% (at 1 mL/min)
Composition precision	≤ 0.15% RSD
Autosampler	
Sample capacity	Up to 216 positions
Injection volume range	0.1 - 100 µL
Injection precision	≤ 0.3% RSD
Carryover	≤ 0.002%
Column Oven	
Temperature control range	Ambient +5 °C to 100 °C
Temperature stability	±0.1 °C
Detector (DAD/PDA)	
Wavelength range	190 - 800 nm
Noise (RMS)	≤ 1.0×10^{-6} AU
Drift	≤ 1.0×10^{-6} AU/h
Data acquisition rate	Up to 100 Hz

System Configuration

Modular design for maximum flexibility

The LC3500 system consists of high-performance, modular components that work together to provide reliable and reproducible results for a wide range of applications. Each module is engineered with advanced technology and precision manufacturing to ensure excellent performance and long-term stability.



Solvent Manager (High-Pressure Pump)
145 MPa, outstanding flow stability

Autosampler
High-throughput, high precision

Column Oven
Accurate temperature control

Detector
PDA/DAD, high sensitivity

Key Components and Highlights



High-Pressure Pump

- Maximum operating pressure up to 145 MPa
- Flow rate range: 0 - 10 mL/min
- Excellent flow stability and low pulsation
- Supports binary or quaternary gradient options



Autosampler

- Up to 216 sample positions
- High injection precision and repeatability
- Supports partial loop and full loop injection
- Automatic rinsing to prevent carryover



Column Oven

- Temperature control range: ambient +5 °C to 100 °C
- High temperature stability (±0.1 °C)
- Supports multiple column configurations



Detector (DAD/PDA)

- Wavelength range: 190 - 800 nm
- High sensitivity and low noise
- Fast data acquisition rate
- Excellent baseline stability

Typical Configuration

Customizable to Meet Your Application Needs

Module	Model	Description
System Controller	LC3500-C	System control and communication
High-Pressure Pump	LC3500-P	145 MPa, binary or quaternary gradient
Autosampler	LC3500-A	216 positions, high precision
Column Oven	LC3500-T	Ambient +5 °C to 100 °C
DAD Detector	LC3500-D	190 - 800 nm
Software	LC3500-WS	Chromatography workstation

Optional Configurations

Optional Module	Description
FLD	Fluorescence detector
ELSD	Evaporative light scattering detector
RID	Refractive index detector
MS	Mass spectrometer interface
Additional Column Oven	Extended column capacity
Cooling Autosampler	For temperature-sensitive samples

Note: The above configuration is for reference only. Actual configuration may vary based on specific requirements.

Applications

Reliable Solutions for Diverse Industries

The LC3500 UHPLC system is widely used in pharmaceuticals, food and beverage, environmental analysis, chemicals, academic research and other fields, providing reliable and reproducible results.



Pharmaceuticals
Drug analysis, impurity detection, quality control



Food & Beverage
Additives, contaminants, nutritional components



Environmental Analysis
Pollutants, pesticide residues, water quality monitoring



Chemical & Petrochemical
Raw materials, intermediates, product quality control



Academic Research
Proteins, peptides, metabolites, natural products



Biotechnology
Biomolecules, oligonucleotides, and biologics