

AGILENT

1100 Series

The Agilent 1100 Series is a highly successful and widely deployed modular High-Performance Liquid Chromatography (HPLC) system. Known for its reliability, flexibility, and robust performance, it consists of stackable modules including pumps, autosamplers, column compartments, and various detectors, communicating via a proprietary CAN bus to form an integrated analytical platform. Its specifications represent the gold standard for routine analytical chromatography.

SPECIFICATIONS

General

Interfaces	CAN, GPIB, RS-232C, APG Remote, optional LAN (via interface card)
Display	Optional Handheld Control Module (G1323B) or via PC software

Physical

Power Supply	100 - 240 VAC, 50/60 Hz (per module)
Operating Temperature	4 to 55 °C
Wetted Materials (Standard)	Stainless steel, titanium, gold, sapphire, ruby, ceramic, PTFE, PEEK

System Overview

System Architecture	Modular High-Performance Liquid Chromatography (HPLC) System
Maximum Operating Pressure	400 bar (5880 psi)
pH Range	1.0 - 12.5 (standard materials)

Solvent Delivery System (Pump Module)

Pump Type	Quaternary (G1311A) / Binary (G1312A) / Isocratic (G1310A) options
Flow Rate Range	0.001 - 10.0 mL/min
Flow Rate Precision	≤ 0.3% RSD (typically < 0.15% RSD)
Pressure Range	0 - 400 bar (0 - 5880 psi)
Composition Range	0 - 100%
Integrated Vacuum Degasser	4 channels (G1322A standard degasser)
Degasser Internal Volume	~12 mL per channel (G1322A)

Sample Management (Autosampler Module)

Injection Volume Range	0.1 - 100 µL (standard autosampler)
Injection Precision (RSD)	< 0.25% RSD (from 5 to 100 µL)
Sample Capacity	100 × 2 mL vials (standard tray)
Needle Wash Function	Standard integrated

Column Compartment

Temperature Control Range	10 °C below ambient to 80 °C (G1316A)
Temperature Stability	± 0.15 °C
Temperature Accuracy	± 0.8 °C
Heat-up Time	5 minutes (from ambient to 40 °C)
Cool-down Time	10 minutes (from 40 °C to 20 °C)
Column Capacity	Up to three 30 cm columns
Internal Volume	3 µL (left heat exchanger), 6 µL (right heat exchanger)

Detection (Optical / UV-Vis / DAD)

Detector Type	Diode Array Detector (G1315B)
Light Source (DAD)	Deuterium and Tungsten lamps
Wavelength Range (DAD)	190 - 950 nm
Wavelength Accuracy	± 1 nm
Slit Width (DAD)	Programmable: 1, 2, 4, 8, 16 nm
Number of Diodes (DAD)	1024

Detection (Optical / UV-Vis / VWD)

Light Source (VWD)	Deuterium lamp
Wavelength Range (VWD)	190 - 600 nm

Control, Software, and Interfaces

Supported Control Software	Agilent ChemStation, OpenLAB CDS
Instrument Control Protocols	CAN bus (internal module communication)

Environmental and Regulatory Compliance

Non-operating Temperature Range	-40 to 70 °C
Operating Humidity	< 95% at 25 - 40 °C (non-condensing)
Maximum Operating Altitude	2000 m (6562 ft)

Physical and Electrical

Line Voltage	100 - 240 VAC, ± 10%
Line Frequency	50/60 Hz, ± 5%

Control & Software

Hardware Control	Optional Handheld Control Module (G1323A/B) for local operation, diagnostics, and method editing
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Safety & Diagnostics

Leak Detection	Built-in leak sensors in all modules with safe leak handling and automatic system shutdown
Early Maintenance Feedback (EMF)	Continuous tracking of instrument usage (e.g., pump seal wear, lamp burn time) with user-set limits
System Diagnostics	Extensive internal diagnostics, error detection, and continuous monitoring with local/remote logging

Sample Handling

Supported Sample Containers	Standard 2 mL vials; 100 µL / 250 µL microvials; micro-inserts
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Compliance

GLP/GMP Features	Built-in system suitability, IQ/OQ protocols, electronic logs
Regulatory Certifications	CE, CSA, UL

Communications

Inter-module Communication	CAN (Controller Area Network) bus
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TECHNOLOGY

High-Performance Liquid Chromatography (HPLC)

APPLICATIONS

Analytical Chemistry

Generated by SpecAtlasHub (specatlashub.com). Specifications are compiled from available sources and are subject to change — verify critical values against the manufacturer before purchase.