AGILENT

1200 HPLC

The Agilent 1200 Series HPLC is a highly configurable, modular high-performance liquid chromatography system widely adopted in analytical chemistry, pharmaceutical QA/QC, and research. Expanding upon the industry-standard 1100 Series, the 1200 Series provides flexible deployment options, offering up to 400 bar maximum pressure in its standard modules and up to 600 bar for Rapid Resolution Liquid Chromatography (RRLC) configurations.

SPECIFICATIONS

General

Interfaces	CAN, LAN, GPIB, RS-232, APG Remote (configuration dependent)
Display	None (controlled via software or optional G1323B Control Module)

Physical

Power Supply	100 - 240 VAC, 50/60 Hz (per module)
Operating Temperature	4 to 55 °C °C

General System Specifications

System Configuration	Modular (Pump, Autosampler, Column Compartment, Detector modules)
Maximum Operating Pressure	400 bar / 5880 psi (Standard 1200 Series) / 600 bar / 8700 psi (1200 Series RRLC)
pH Range	1.0 to 12.5 (standard materials)

Solvent Delivery System (Pump)

Flow Rate Range	0.001 to 10.0 mL/min (Standard Pumps) / up to 5.0 mL/min (RRLC Binary Pump SL)
Number of Solvents / Channels	Up to 4 (Quaternary Pump) or 2 (Binary Pump)
Flow Precision	≤ 0.07 % RSD (or ≤ 0.02 min SD)
Pressure Pulsation	< 2 % amplitude (typically < 1 %) at 1 mL/min isopropanol
Compressibility Compensation	User-selectable, based on mobile phase properties
Degasser Type	Vacuum membrane degasser

Sample Management (Autosampler)

Injection Volume Range	0.1 to 100 µL (Standard Autosampler G1329A)
Injection Precision	< 0.25 % RSD (from 5 to 100 µL, Standard Autosampler)
Sample Capacity (Vials)	100 x 2 mL vials (Standard tray)
Carryover	Typically < 0.1 % (without automated needle wash)

Column Compartment

Temperature Control Range	10 °C below ambient to 80 °C (G1316A TCC)
Temperature Stability	± 0.15 °C
Column Capacity	Up to 3 columns of 30 cm length (G1316A TCC)

Detector Specifications (DAD / UV-Vis)

Wavelength Range	190 to 950 nm (G1315B DAD option) / 190 to 600 nm (G1314B VWD option)
Light Source	Deuterium and Tungsten lamps (DAD)
Flow Cell Volume	13 µL (Standard Flow Cell)
Flow Cell Path Length	10 mm (Standard Flow Cell)
Maximum Flow Cell Pressure	120 bar (Standard Flow Cell)

Software and Control

Chromatography Data System (CDS)	Agilent ChemStation, EZChrom, OpenLAB CDS

Connectivity and Interfaces

Controller Area Network (CAN)	Yes (Inter-module communication standard)

Environmental and Safety Compliance

Operating Humidity Range	< 95 % non-condensing
Safety Certifications	CSA, UL, CE

Physical and Power Specifications

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

Pump & Fluidics

Pump Mechanism	Dual-piston in series with proprietary servo-controlled variable stroke drive
Gradient Mixing	Low-pressure quaternary or high-pressure binary mixing (pump module dependent)
Composition Precision	< 0.2 % RSD or < 0.04 min SD (whichever is greater, at 0.2 and 1 mL/min)

Detection

Data Acquisition Rate	Up to 80 Hz (detector module dependent)

Software & Control

Maintenance Features	Early Maintenance Feedback (EMF) for continuous usage tracking (e.g., seal wear, lamp hours)

Environmental

Maximum Operating Altitude	2000 m
Storage Temperature	-40 °C to +70 °C

Compliance

Installation Category	II (IEC 61010)

TECHNOLOGY

High-Performance Liquid Chromatography (HPLC)

APPLICATIONS

Analytical chemistry, pharmaceutical analysis, environmental QA/QC, and biochemical research