

AGILENT

7890A

The Agilent 7890A is a high-performance, configurable gas chromatograph (GC) that set the industry standard for reliability and precision. It features advanced 5th-generation Electronic Pneumatics Control (EPC) for precise flow and pressure management, allowing for a pressure setpoint resolution of 0.001 psi and retention time repeatability of less than 0.008%. The system supports multiple inlet and detector configurations (up to two inlets and three detectors simultaneously) and offers fast oven cool-down (450 °C to 50 °C in 4.0 minutes) alongside sophisticated heating profiles with up to 20 ramps. The 7890A is highly versatile, supporting detectors such as FID, TCD, micro-ECD, NPD, FPD, and various Agilent MS systems.

SPECIFICATIONS

Physical

Power Supply	120 V / 200 V / 220 V / 230 V / 240 V (configuration dependent), 48-63 Hz, up to 2950 W
Operating Temperature	15 to 35 °C
Dimensions (W×H×D)	580 × 490 × 510 mm
Weight	49 kg

System Performance

Retention Time Repeatability	< 0.008% or < 0.0008 min
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Column Oven Specifications

Internal Dimensions	28 × 31 × 16 cm (W×H×D)
Operating Temperature Range	Ambient +4 °C to 450 °C (without cryo cooling)
Cryogenic Cooling Options	Liquid N2 (-80 °C to 450 °C), Liquid CO2 (-40 °C to 450 °C)
Temperature Setpoint Resolution	0.1 °C
Maximum Heating Rate	120 °C/min
Cool-down Time	450 °C to 50 °C in 4.0 min (at 22 °C ambient)
Maximum Temperature Ramps	20 ramps
Maximum Plateaus	21 plateaus
Ambient Rejection	< 0.01 °C per 1 °C ambient change

Electronic Pneumatics Control (EPC)

Pressure Setpoint Resolution	0.001 psi
Atmospheric Pressure Compensation	Yes, standard for all EPC modules
Carrier Gas Compatibility	Helium, Nitrogen, Hydrogen, Argon/Methane

Inlet Specifications

Supported Inlet Types	Split/Splitless (S/SL), Multimode (MMI), Purged Packed, Cool On-Column (COC), Programmable Temperature Vaporizing (PTV), Volatiles Interface (VI)
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Detector Specifications

Supported Detector Types	FID, TCD, micro-ECD, NPD, FPD, SCD, NCD, MS
FID Linear Dynamic Range	> 10 ⁷
TCD Linear Dynamic Range	10 ⁵
Maximum Data Acquisition Rate	500 Hz
Mass Spectrometer (MS) Compatibility	Agilent 5975 Series MSD, 7000 Series Triple Quadrupole

Sample Introduction / Autosampler

Compatible Autosamplers	Agilent 7693A, 7683B, G1888, 7697A, CTC PAL
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Software and Control

Chromatography Data System (CDS) Compatibility	OpenLAB CDS, ChemStation, EZChrom Elite
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Environmental and Regulatory

Operating Humidity Range	5% to 95% non-condensing
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Oven

Maximum Run Time	999.99 minutes
Column Capacity	Up to two 105 m x 0.530 mm id capillary columns or two 10-ft glass/stainless steel packed columns

Inlets

Maximum Temperature (S/SL Inlet)	400 °C
Pressure Control Range (S/SL Inlet)	0 to 100 psi standard (0 to 150 psi optional)
Total Flow Range (He/H ₂ , S/SL Inlet)	0 to 1250 mL/min
Total Flow Range (N ₂ /Ar, S/SL Inlet)	0 to 200 mL/min
Maximum Split Ratio	7500:1
Multimode Inlet (MMI) Maximum Heating Rate	900 °C/min
Purged Packed (PP) Inlet Maximum Temperature	400 °C

Detectors

FID Maximum Operating Temperature	450 °C
TCD Maximum Operating Temperature	400 °C
NPD Maximum Operating Temperature	400 °C
Micro-ECD Maximum Operating Temperature	400 °C
FPD Maximum Operating Temperature	250 °C
Micro-ECD Linear Dynamic Range	$> 5 \times 10^4$ (lindane)
NPD Linear Dynamic Range	$> 10^5$
FPD Linear Dynamic Range (Sulfur)	$> 10^3$
FPD Linear Dynamic Range (Phosphorus)	10^4

Features & Technology

Retention Time Locking (RTL)	Supported (requires compatible software)
Capillary Flow Technology (CFT)	Supported (Deans Switch, Splitters, Purged Ultimate Union)

Pneumatics (EPC)

Standard Pressure Range	0 to 100 psi
High-Pressure Range Option	0 to 150 psi

TECHNOLOGY

Gas Chromatography (GC)

APPLICATIONS

Analytical chemistry, volatile and semi-volatile compound separation, environmental analysis, hydrocarbon processing, forensics, and food safety

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