AGILENT

7890B

The Agilent 7890B is a highly reliable and widely used high-performance Gas Chromatograph (GC) system. It features 5th-generation Electronic Pneumatics Control (EPC), highly precise oven temperature programming, and support for dual-inlet/multi-detector configurations. The 7890B incorporates integrated sleep/wake modes and optional helium conservation modules to reduce operating costs without compromising retention time repeatability or analytical performance.

SPECIFICATIONS

Physical

Operating Temperature	15 to 35 °C
Dimensions (W×H×D)	580 × 490 × 510 mm
Weight	49 kg

General System Specifications

Supported Inlet Channels	Up to 2
Maximum Heated Zones	6 independent heated zones (2 inlets, 2 detectors, 2 auxiliary; excluding oven)
Retention Time Repeatability	< 0.0008 min (< 0.008%)

Column Oven

Oven Dimensions (W×H×D)	28 × 31 × 16 cm
Operating Temperature Range	Ambient +4 °C to 450 °C
Cryogenic Cooling Options	Liquid Nitrogen (-80 °C to 450 °C) or Liquid CO2 (-40 °C to 450 °C)
Temperature Setpoint Resolution	0.1 °C
Maximum Number of Temperature Ramps	20 ramps (21 plateaus)
Maximum Temperature Programming Rate	Up to 120 °C/min (240V oven configuration)
Oven Cool-down Time	4.0 minutes (450 °C to 50 °C at 22 °C ambient)
Column Capacity	Accommodates up to two 105 m capillary columns

Pneumatics and Flow Control (EPC)

Pressure Setpoint Resolution	0.001 psi
Barometric Pressure Compensation	Standard
Ambient Temperature Compensation	Standard

Inlets (Injectors)

Split Ratio Range	Up to 7500:1 (for Split/Splitless capillary inlet)
Available Inlet Types	Split/Splitless (SSL), Multimode Inlet (MMI), Purged Packed (PPI), Programmable Temperature Vaporizing (PTV), Volatiles Interface (VI), Cool On-Column (COC)

Detectors

Available Detector Types	FID, TCD, micro-ECD, NPD, FPD+, SCD, NCD, MS
FID Data Acquisition Rate	Up to 500 Hz
FID Linear Dynamic Range	> 10^7
TCD Minimum Detectable Level (MDL)	< 400 pg tridecane/mL
TCD Linear Dynamic Range	10^5
FID Maximum Operating Temperature	450 °C
TCD Maximum Operating Temperature	400 °C

Autosampler and Sample Handling

Compatible Liquid Autosamplers	Agilent 7693A, 7650A, CTC PAL3
Headspace Sampler Compatibility	Agilent 7697A, 8697

Data Communications and Control

Compatible Chromatography Data Systems (CDS)	Agilent OpenLab CDS, ChemStation, EZChrom, MassHunter

Environmental Specifications

Operating Humidity Range	5% to 95% (non-condensing)

Power Requirements

Maximum Power Consumption	2250 VA (120V configuration) / 2950 VA (240V fast-heating configuration)

Pneumatics

Auxiliary EPC Channels	Up to 9 channels (via up to 3 optional modules)

Software & Features

Sleep/Wake Mode	Supported (user-programmable for gas and power conservation)
Early Maintenance Feedback (EMF)	Supported

Accessories

Capillary Flow Technology (CFT)	Supported (Deans switch, splitters, purges, backflush)

Oven

Oven Maximum Run Time	999.99 minutes

Inlets

Split/Splitless (S/SL) Inlet Maximum Operating Temperature	400 °C
Multimode Inlet (MMI) Temperature Range	-160 °C to 600 °C (with liquid N2 cooling)

Inputs & Outputs

Analog Signal Outputs	2 channels (1 mV, 1 V, 10 V scales)

System Compatibility

Compatible Mass Spectrometers	Agilent 5975, 5977, 7000, 7010, and 7200 Series

Safety

Hydrogen Safety	Optional built-in hydrogen sensor module

TECHNOLOGY

Gas Chromatography (GC)

APPLICATIONS

Analytical chemistry, environmental analysis, petrochemicals, pharmaceuticals, food safety, forensics, and materials testing