

AGILENT

6890N

The Agilent 6890N is an industry-standard gas chromatograph (GC) system featuring advanced electronic pneumatics control (EPC) and built-in network connectivity for high-performance laboratory analytical chemistry.

SPECIFICATIONS

General

Interfaces	LAN (10Base-T), RS-232-C, APG Remote, dual analog outputs (0-1 V / 0-10 V / 0-1 mV option-dependent)
Display	Vacuum fluorescent display (VFD), 2 lines x 20 characters

Physical

Power Supply	120 V AC (+10% / -10%), 48-66 Hz, 2250 VA max; or 230 V AC (+10% / -10%), 48-66 Hz, 2950 VA max (hardware variant dependent)
Operating Temperature	15 °C to 35 °C °C
Dimensions (W×H×D)	580 mm x 500 mm x 540 mm mm
Weight	49 kg kg

System Configuration & Architecture

Chromatography Type	Gas Chromatography (GC)
Maximum Column Capacity	Up to 2 capillary columns or packed columns
Maximum Inlets Supported	2
Maximum Detectors Supported	2

Column Oven Specifications

Oven Operating Temperature Range	Ambient +4 °C to 450 °C
Cryogenic Cooling Options	Liquid CO2 (down to -50 °C) or Liquid N2 (down to -80 °C)
Ambient Temperature Rejection	< 0.01 °C oven temperature change per 1 °C ambient temperature change
Temperature Setpoint Resolution	1 °C
Maximum Heating Rate	120 °C/min
Cool-down Time	450 °C to 50 °C in < 6.0 minutes (at 22 °C ambient)
Oven Temperature Ramps	6 programming ramps
Oven Temperature Plateaus	7 plateaus
Maximum Run Time	999.99 minutes
Oven Volume	13.9 L
Oven Internal Dimensions	280 mm x 305 mm x 165 mm

Gas & Flow Control

Pneumatics Control Type	Electronic Pneumatics Control (EPC)
Carrier Gas Options	Helium, Hydrogen, Nitrogen, Argon/Methane
Pressure Control Range	0 to 100 psi (standard); 0 to 150 psi (with optional high-pressure EPC)
Pressure Setpoint Resolution	0.01 psi

Sample Introduction & Autoinjection

Supported Inlets	Split/Splitless (S/SL), Purged Packed (PPIP), Cool On-Column (COC), Programmable Temperature Vaporizer (PTV), Volatiles Interface (VI)
Autosampler Compatibility	Agilent 7683 Series, Agilent 7673 Series, Agilent 7693A
Maximum Vial Capacity	Up to 100 vials (utilizing Agilent 7683 series autosampler with tray)
Split/Splitless Inlet Max Temperature	400 °C
Split Ratio Range	Up to 7500:1 (split flow up to 1500 mL/min He/H ₂)

Detector Specifications & Sensitivity

Detector Types Supported	Flame Ionization Detector (FID), Thermal Conductivity Detector (TCD), Micro-Electron Capture Detector (uECD), Nitrogen-Phosphorus Detector (NPD), Flame Photometric Detector (FPD), Mass Selective Detector (MSD)
FID Data Acquisition Rate	Up to 200 Hz
FID Linear Dynamic Range	> 10 ⁷
FID Maximum Temperature	450 °C
TCD Linear Dynamic Range	10 ⁵
TCD Maximum Temperature	400 °C
uECD Maximum Temperature	400 °C
uECD Radioactivity Source	Nickel-63 (Ni-63), < 15 mCi (< 555 MBq)
uECD Linear Dynamic Range	> 5 x 10 ⁴
NPD Maximum Temperature	400 °C
NPD Dynamic Range	> 10 ⁵ N, > 10 ⁵ P

Control, Software & Communication

Control Interface Software	Agilent ChemStation, OpenLab, EZChrom, or compatible third-party CDS software packages
Communication Protocols	TCP/IP, RS-232, GPIB (optional interface board)

Power & Electrical Requirements

Power Consumption Peak	2250 VA (120 V configuration), 2950 VA (230 V configuration)
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Physical & Environmental Specifications

Operating Humidity Range	5% to 95% relative humidity (non-condensing)
Maximum Operating Altitude	4,600 m

Compliance & Certifications

Safety Certifications	CSA, CE, UL
Quality Standard	ISO 9001 certified manufacturing facility

Detector Specifications

Nitrogen-Phosphorus Detector (NPD) Selectivity	25,000:1 g N/g C, 75,000:1 g P/g C
Flame Photometric Detector (FPD) Selectivity	10 ⁵ g C/g S, 10 ⁶ g C/g P

Inlet Specifications

Split/Splitless Inlet Flow Control Range	0 to 200 mL/min (N ₂), 0 to 1000 mL/min (He/H ₂)
Split/Splitless Inlet Pressure Control Range	0 to 100 psi (standard), 0 to 150 psi (high-pressure option)
Purged Packed Inlet Flow Range	0 to 100 mL/min
Cool On-Column Inlet Pressure Range	0 to 100 psi

Environmental

Storage Temperature Range	-40 °C to 70 °C
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Performance

Retention Time Repeatability	< 0.008 % or < 0.0008 min
Peak Area Repeatability	< 1 % RSD

Pneumatics

Atmospheric Pressure Compensation	Standard (compensates for altitude and barometric changes)
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Inlets

Cool On-Column Inlet Maximum Temperature	450 °C
Programmed Temperature Vaporizing (PTV) Inlet Maximum Temperature	450 °C
Purged Packed Inlet Maximum Temperature	400 °C
Volatiles Interface Maximum Temperature	400 °C

Detectors

Flame Photometric Detector (FPD) Maximum Temperature	250 °C
Flame Photometric Detector (FPD) Dynamic Range	> 10 ³ (S), > 10 ⁴ (P)

Inputs & Outputs

Analog Outputs	Two channels (0-1 V, 0-10 V, or 0-1 mV selectable)
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Oven

Oven Temperature Stability	< ±0.01 °C for each 1 °C change in ambient temperature
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TECHNOLOGY

Gas Chromatography (GC)

APPLICATIONS

Analytical Chemistry

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