

540 Instrument Specifications

Specifications are subject to change without notice. The latest revision can be obtained from an Agilent Technologies Sales Office.

Physical specifications

Dimensions and average weight

- Height: 50 cm (20 inches)
- Width: 58 cm (23 inches) with EPC inlets; 68 cm (27 inches) with manual inlets
- Depth: 54 cm (22 inches)
- Average weight: 49 kg (108 lbs)

Laboratory environmental conditions

- Storage extremes: -40°C , 65°C
- Recommended ambient temperature: 15 to 35°C
- Recommended ambient humidity: 5 to 95%

Safety certifications

- CSA certified and NRTL listed
- IEC self-certified

Data communications

- GPIB, RS-232-C, and two analog output channels (1 mV, 1 V, and 10 V output available) as standard
- INET interface optional

Heated zones

- Independent heated zones, not including oven: six (two inlets, two detectors, and two auxiliary)
- Maximum operating temperatures for auxiliary zones: 400°C

Column oven

- Dimensions: 28 × 31 × 16 cm
- Operating temperature: 4°C above ambient to 450°C
 - with LN₂ cryo: -80°C to 450°C
 - with CO₂ cryo: -55°C to 450°C
- Temperature setpoint resolution: 1°C
- Maximum setpoint temperature rate: 120°C/min
- Actual programming rate: see Figure 540-1
- Cool-down rates: see Figure 540-2. Rates are greater when using the optional oven exhaust deflector or cryogenic cooling.
- Maximum run time: 999.99 min
- Programming ramps/plateaus: 6/7
- Ambient rejection: <0.01°C per 1°C
- Column bleed compensation standard for two channels

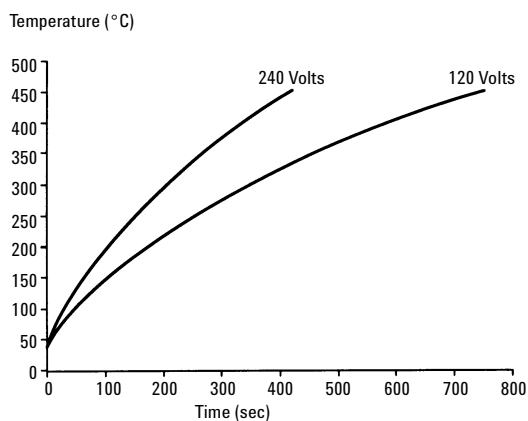


Figure 540-1 Typical oven heatup rates,
6890 Series GC

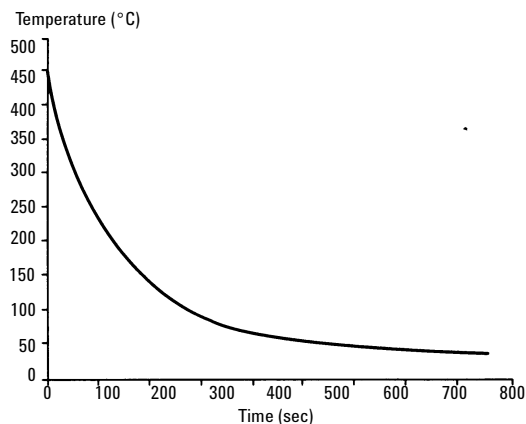


Figure 540-2 Typical oven cool-down
rates, 6890 Series GC

Inlets

- Maximum inlets installed: two
- All inlets include septum purge
- Inlets available:
 - Packed: electronic or manual pressure/flow, 400°C max
 - Split/splitless: electronic or manual pressure/flow, 400°C max, electronic entry of pressure or flow and split ratio with electronic version
 - Temperature-programmable cool on-column: electronic pressure/flow, 450°C max
 - Programmable temperature vaporizer, 450°C max
 - Volatiles interface, 400°C max
- For electronic inlets:
 - Pressure setting range: 0 to 100 psi
 - Total flow setting range: split/splitless, 0 to 200 mL/min nitrogen, 0 to 1000 mL/min hydrogen or helium
 - Packed: 0 to 100 mL/min

Detectors

- All detectors are available with electronic control of gases.
- All detectors except the μ -ECD are available with manual control of gases.
- All detectors (manual or electronic) include electronic on/off of all gases.
- Detectors available:
 - Flame ionization detector (FID) for packed or capillary columns
 - Flame ionization detector (FID) optimized for capillary columns
 - Thermal conductivity detector (TCD)
 - Electron capture detector (ECD)
 - Micro-cell electron capture detector (μ -ECD)
 - Nitrogen-phosphorus detector (NPD) for packed or capillary columns
 - Nitrogen-phosphorus detector (NPD) optimized for capillary columns
 - Flame photometric detector (FPD), single or dual wavelength
 - Atomic emission detector (AED)
 - Mass selective detector (MSD)

FID

- 450°C maximum operating temperature
- Automatic flame ignition from the keypad or ChemStation
- Flame out detection
- MDL: <5 pg carbon/s as propane using nitrogen carrier and 0.29 mm jet
- Linear dynamic range: 10^7 ($\pm 10\%$) with nitrogen carrier and 0.29 mm jet

NPD

- 400°C maximum operating temperature
- Automatic baseline adjusting via keypad or ChemStation
- MDL: <0.4 pg N/s, <0.2 pg P/s with azobenzene/malathion mixture

- Selectivity: 25000 to 1 gN/gC, 75000 to 1 gP/gC with azobenzene/malathion/octadecane
- Dynamic range: $>10^5$ N, $>10^5$ P with azobenzene/malathion mixture

TCD

- 400°C maximum operating temperature
- Single filament with microcell
- MDL: <400 pg propane/mL helium carrier (MDL may be affected by laboratory environment.)
- Linear dynamic range: 10^5 ($\pm 5\%$)

ECD

- Equipped with anode purge for contamination resistance
- 400°C maximum operating temperature
- Makeup gas types: argon/5% methane, nitrogen
- Radioactive source: 15 mCi ^{63}Ni plated
- MDL: <0.04 pg/s lindane
- Dynamic range: $>10^4$ with lindane

μ -ECD

- Radioactive source: 15 mCi ^{63}Ni plated

FPD

- Range: 10^3 (S), 10^4 (P)
- Selectivity: 10^5 to 1 gS/gC, 10^6 to 1 gP/gC

AED

See the specification guide for AED.

MSD

See the specification guide for MSD.

