

Agilent 6820 Gas Chromatograph System

Data Sheet



Dimensions and Weight

- Height: 50 cm
- Width: 68 cm
- Depth: 52 cm
- Average weight: 60 kg

Keyboard and Display

Available in Chinese or English.

Environmental Conditions

- Indoor use
- Ambient operating temperature:
5 °C to 45 °C
- Ambient operating humidity:
5% to 90%
- Storage extremes:
-40 °C to 65 °C
- Operating altitude: 4000m

Safety and Regulatory Certifications

Safety standards

- Canadian Standards Association (CSA): C22.2 No. 1010.1

- CSA/Nationally Recognized Test Laboratory (NRTL): 61010A-1
- International Electrotechnical Commission (IEC): 61010-1
- EuroNorm (EN): 61010-1

Electromagnetic compatibility (EMC) and radio frequency interference (RFI) regulation conformity

- CISPR 11/EN 55011: Group 1, Class A
- IEC/EN 61326
- Canada: ICES-001
- Australia/New Zealand: AS/NZS 3548
- Russia: Gost 29216
- Czech Republic: CSN EN55011
- Hungary: MSZ EN55011

Designed and manufactured under a quality system registered to ISO 9001. The Declaration of Conformity is available.



Agilent Technologies

Power Requirements

- 120 V (+5%, -10%)
- 200 V (+5%, -10%)
- 220 V (+10%, -10%)
- 230 V (+5%, -10%)
- 240 V (+5%, -10%)
- Frequency: 47.5~63 Hz
- 2950 VA (max) at 200 V, 2250 VA (max) at all other voltages

Column Oven

- Dimensions:
28.0 × 30.5 × 16.5 cm
- Operating temperature:
4 °C above ambient to 425 °C
- Temperature setpoint
resolution: 1 °C
- Maximum temperature ramp
rate: 75 °C/min (see Table 1)
- Maximum run time: 999.99 min
- Temperature programming
ramps: 5
- Ambient rejection:
<0.01 °C per 1 °C
- Column bleed compensation
standard for two channels
- Typical heating-up profile and
cool-down rate are shown in
Figure 1 and Figure 2.

Table 1. Typical 6820 GC Oven Ramp Rates

Temperature range (°C)	220 V Oven rates (°C/min)
50 to 70	75
70 to 115	45
115 to 175	40
175 to 300	30
300 to 425	20

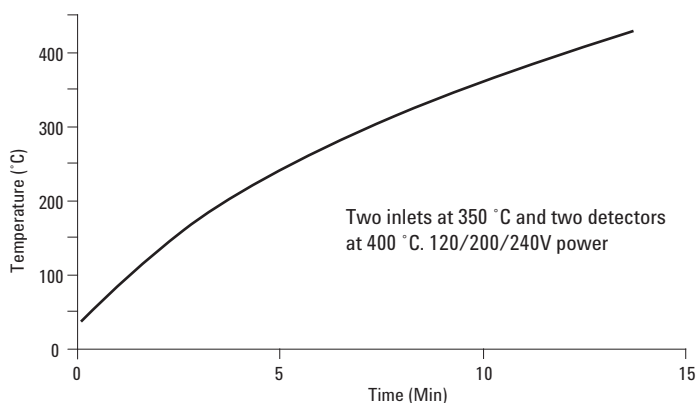


Figure 1. Typical oven heating profile – 6820GC

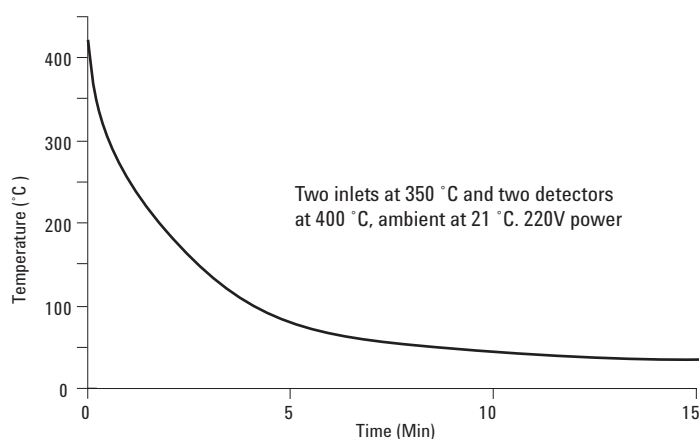


Figure 2. Typical oven cool-down rate – 6820GC

Heated Zones

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

Inlets

- Maximum inlets installed: two
- Inlets available:
 - Purged packed (PP)
 - Split/Splitless capillary (S/SL)

Purged packed

- Manual pressure/flow control
- 400 °C maximum operating temperature
- Pressure range: 0–100 psi
- Adapters included for 1/4-inch and 1/8-inch packed columns, and 0.530-mm capillary columns

S/SL

- Manual pressure/flow control
- 400 °C maximum operating temperature
- Pressure range: 0-30 psi

Detectors

All detectors use manual pneumatic control for detector gases. Up to two detectors may be installed on a GC.

Available detectors:

- Flame ionization detector (FID)
- Thermal conductivity detector (TCD)
- Electron capture detector (ECD)
- Nitrogen phosphorous detector (NPD)

FID

- Manual pressure/flow control
- 425 °C maximum operating temperature
- MDL: <5 pg carbon/s as propane using N₂ carrier and 0.29-mm id jet
- Linear dynamic range: <±10% over 10⁷ range with N₂ carrier and 0.29-mm id jet
- 200 Hz maximum data acquisition rate

TCD

- Manual pressure/flow control
- 400 °C maximum operating temperature
- MDL: <400 pg propane/mL using He carrier (MDL may be affected by laboratory environment)
- Linear dynamic range: 10⁵ (±5%)

ECD

- Manual pressure/flow control
- Equipped with hidden anode and high velocity flows for contamination resistance
- 400 °C maximum operating temperature
- Makeup gas types: argon/5% methane or nitrogen
- Radioactive source: <15 mCi ⁶³Ni
- MDL: <0.02 pg/s lindane
- Dynamic range: >5 × 10⁵ with lindane

- Linear dynamic range: >5 × 10⁴ with lindane
- 50 Hz maximum data acquisition rate

NPD

- Manual pressure/flow control
- Available optimized for capillary columns
- 400 °C maximum operating temperature
- MDL: <0.4 pg N/s, <0.2 pg P/s with azobenzene/malathion mixture
- Selectivity: 25,000 to 1 gN/gC, 75,000 to 1 gP/gC with azobenzene/ malathion mixture
- Dynamic range: >10⁵ N, >10⁵ P with azobenzene/ malathion mixture
- Data acquisition rate: up to 200 Hz

Data Communications

- RS-232-C with adjustable baud rate
- Two analog output channels (1 mV, 1 V, and 10 V output available) as standard
- Remote start/stop
- LAN

Other Specifications

- Clock time programming
- Run deviation log (notes any changes to electrical setpoints or expected values during a run)
- Control of four internal 24-volt valves
- Storage of nine methods

Cerity NDS for Chemical QA/QC

The Agilent Cerity Chemical system requires Microsoft® Windows® 2000 Professional (service pack 2) or Windows XP Professional.

The software is supplied in nine languages:

Brazilian Portuguese	
Chinese	Italian
English	Japanese
French	Korean
German	Spanish

Cerity Chemical controls GC parameters (valves, heated zones, oven temperatures, detectors [FID, TCD, and ECD] and inlets [S/SL and Packed inlet] etc), and collects full-range digital signal data from the detectors.

Methods contain all the electrical parameters for GC control and data acquisition and evaluation, including integration, quantification, and reporting.

All system data (including raw data) and methods are stored in a protected database; no data can be overwritten. Sample data and method instrument parameters are easily archived. Changes to a method are stored as a new version, rather than overwriting the original version. Thus, the method used to generate the results is forever linked to the sample and is available for data recalculation.

Cerity Chemical User Interface

The user interface consists of four main views: Sample, Instrument, Method, and Reprocess.

The Cerity Chemical user interface allows for very fast customization (less than 1 minute). The users just click on the capabilities they want available. The user will no longer have to contend with unneeded screens. Lab managers can set the level of access that is available to each user. This restriction of access protects methods and data from unauthorized modification.

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