



# Agilent 3000 Refinery Gas Analyzer Specifications



## Dimensions / Weight

The 4-channel Agilent 3000 Refinery Gas Analyzer (RGA) weighs 11.2 kg (24.8 lbs) and measures 15.5 cm high × 47.2 cm wide × 42.0 cm deep (6.1 × 18.5 × 16.5 in.).

## Environmental Conditions

- Operating temperature range: 0 °C to 50 °C
- Relative humidity: 5 to 95% non-condensing
- Altitude to 15,000 ft (4,572 m)
- Usage: indoor or enclosed

## Sampling

- Compatible with mixtures that are in a gaseous phase at STP; typically for compounds with BP <250 °C.
- Maximum sample pressure <30 psig; recommended sample pressure 5–10 psig.

## Sample Injector

- Micro-electromechanical devices fabricated from silicon and other inert materials
- Injector types: fixed volume and backflush to vent, heated
- Injection volumes: 1 µL, 0.4 µL
- Internal sample vacuum pump

## Columns

| Channel | Injector type | Injector volume (µL) | Pre-column                   | Analytical column                  |
|---------|---------------|----------------------|------------------------------|------------------------------------|
| A       | Backflush     | 1.0                  | PLOT U (3 m × 0.32 mm)       | MoleSieve 5Å PLOT (10 m × 0.32 mm) |
| B       | Backflush     | 1.0                  | PLOT Q (1 m × 0.32 mm)       | PLOT U (8 m × 0.32 mm)             |
| C       | Backflush     | 0.4                  | Alumina PLOT (1 m × 0.32 mm) | Alumina PLOT (10 m × 0.32 mm)      |
| D       | Fixed volume  | 1.0                  | n/a                          | OV-1 (10 m × 0.15 mm × 2.0 micron) |

- 1/16-in. 316 stainless steel bulk-head deactivated sample introduction port with 5-micron filter

## Linear Dynamic Range

$10^6 \pm 10\%$

## Detector

- Micro-electromechanical device fabricated from silicon and other inert materials
- 240 nanoliter internal volume
- Thermal conductivity (TCD) using Wheatstone Bridge design

## Repeatability

Repeatability is typically  $\leq 0.5\%$  RSD at constant temperature and pressure for components  $\leq C_6$  at % level.

## Column Heater Range

- Isothermal operation: ambient plus 15 °C to 180 °C

## Minimum Detection Level

This will vary by compound, sample matrix injector type, carrier gas and interferences. Typically <10–20 ppm for many compounds. Does not include reactive compounds (for example sulfur containing).

## Carrier Gas

Channel A: Argon

Channels B, C, D: Helium

Swagelok fittings: 1/8-in.

Minimum input pressure: 80 psig

Maximum input pressure: 100 psig



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## Power

- Power supply input:  
100/240 Vac, 50/60 Hz, 250 VA
- Power supply output:  
24 Vdc at 5.4 Amps, 130 Watts

## External Input / Output

- LAN
- Power supply input connector
- Remote start

## Sample Interface

### Heated Vaporizer (Inlet)

- Sample stream pressure reduction, temperature control, removal of entrained liquid and particles
- Recommended for use with LPG type sample streams
- Quick connect fittings
- 2-micron particle filter

#### Operating Conditions

- Flow operating temperature:  
100 °C  $\pm$  10 °C
- Sample input pressure:  
1380–5500 kPa (200–800 psig) (liquified sample)
- Delivery pressure to Micro GC:  
52  $\pm$  17 kPa (7.5  $\pm$  2.5 psig)

#### Environmental Conditions

- Operating temperature range:  
0 to 50 °C
- Relative humidity:  
5 to 95% (non-condensing)
- Altitude to 15,000 ft (4,572 m)
- Usage: indoor or enclosed

#### Physical Specifications

- Power supply input:  
115/230 Vac, 50/60 Hz, 1.2/0.6 Amps
- Power supply output: 15 Vdc at  
6.6 Amps, 100 Watts
- Height: 15.0 cm
- Width: 12.5 cm
- Depth: 9.0 cm
- Weight: 1.4 kg

### Heated Regulator (Inlet)

- Sample stream pressure reduction, temperature control, removal of entrained liquid and particles
- Handles sample gas streams with  $C_5+$  components  $\geq$  0.5 mole %
- Quick connect fittings
- 7-micron sintered stainless steel particle filter

#### Operating Conditions

- Flow operating temperature:  
60 °C to 120 °C
- Sample input pressure:  
14–5500 kPa  
(2–800 psig)
- Delivery pressure to Micro GC:  
0 to 52  $\pm$  17 kPa (0 to 7.5  $\pm$  2.5 psig)

#### Environmental Conditions

- Operating temperature range:  
0 to 50 °C
- Relative humidity:  
5 to 95% (non-condensing)
- Altitude to 15,000 ft (4,572 m)
- Usage: indoor or enclosed

#### Physical Specifications

- Power supply input:  
115/230 Vac, 50/60 Hz,  
1.2/0.6 Amps.
- Power supply output: 15 Vdc at  
6.6 Amps, 100 Watts.
- Height: 15.0 cm
- Width: 12.5 cm
- Depth: 9.0 cm
- Weight: 1.65 kg

### Gas-liquid Separator and Pressure Reducer

- Low pressure manual flow controller
- 5-micron particle filter and moisture trap
- Sample input pressure <500 psig
- Sample inlet connection: 1/8-in. Swagelok fitting

## Safety and Regulatory

Conforms to the following safety standards:

- International Electrotechnical Commission (IEC)
- 1010-1 EuroNorm (EN)
- 61010-1 (CE Mark)

Conforms to the following regulations on Electromagnetic Compatibility (EMC) and Radio Frequency Interference (RFI):

- CISPR 11/EN 55011 Group 1 Class A and EN-50082-1

Declaration of Conformity available

## Control Software and Software Reporting

- Cerity NDS for 3000 Micro GC
- Refinery Gas Report – Four-channel integrated report with calorific calculation.

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