

# Varian 490-GC

## ANESTHETIC GAS ANALYZER

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*For hospitals, clinics and other medical facilities, the Varian 490-GC Anesthetic Gas Analyzer equipped with the micro-machined Differential Mobility Detector ( $\mu$ -DMD) is a simple, turnkey solution for the safe, fast analysis and monitoring of anesthetic gases in operating and recovery rooms.*

### Key Benefits

- ▶ **High sensitivity and unique selectivity.** With the Varian 490-GC Anesthetic Gas Analyzer, you can accurately monitor and analyze trace levels of anesthetic gases in ambient air in a single run, without any matrix interference or quenching effects.
- ▶ **Dual-detector technology.** The complementary dual-detector technology offers more information, faster. The universal Thermal Conductivity Detector ( $\mu$ -TCD) measures bulk matrix composition, and the highly sensitive Differential Mobility Detector ( $\mu$ -DMD) selectively targets trace components, giving you a complete picture of your anesthetic.
- ▶ **Electronic Gas Control.** EGC ensures high reproducibility, and the use of capillary column technology guarantees high separation efficiency.
- ▶ **Turnkey solution.** To ensure fast, accurate and reliable analysis, the Anesthetic Gas Analyzer is factory pre-tuned to specifications and supplied with full documentation and an operational method for easy set-up.
- ▶ **Measure-anywhere capability.** The total cycle time is less than 100 seconds, important in time-critical applications.

# 490-GC Anesthetic Gas Analyzer

Occupational exposure to anesthetic gases is a concern, especially within operating and recovery rooms. In general, anesthetic gases are halogenated components, such as halothane (fluothane), enflurane (ethrane), isoflurane (forane), desflurane (surpane) and sevoflurane (sevorane and ultane). Monitoring the concentration of these gases is important in order to prevent exposure and provide a safe, healthy environment for patients as well as medical staff. Fast and versatile, the 490-GC Anesthetic Gas Analyzer has a total cycle time of less than 100 seconds and is suitable for on-site analysis and monitoring within the operating or recovery room.

The  $\mu$ -DMD is fully integrated into the 490-GC and uses dual detection technology in which the  $\mu$ -TCD and  $\mu$ -DMD are connected in series. Varian Galaxie™ chromatography software processes signals from both detectors, providing selective/trace information ( $\mu$ -DMD) and matrix information ( $\mu$ -TCD) in a single analysis.

## Specifications

### Applicability

The determination of anesthetic gases in operating theaters, including recovery rooms. Operational parameters, including gas flows, are factory tuned and documented.

### External Requirements

Sample must be offered as a gas, 0 °C to 110 °C, with a pressure from ambient up to 1 bar

### Sample Inlet

Heated sample inlet 1/16 in. Valco®

### Analysis Time

The cycle time is less than 100 seconds

### Dynamic Range

- Differential Mobility Detector ( $\mu$ -DMD), generally three decades but component dependent
- Micro-Thermal Conductivity Detector ( $\mu$ -TCD), six decades

### Minimum Detectability

- $\mu$ -TCD, 5 mg/m<sup>3</sup> (1 ppm) for C5
- $\mu$ -DMD, < 100 ppb (approx 0.8 mg/m<sup>3</sup>) for halothane, enflurane, isoflurane, desflurane and sevoflurane

### Repeatability

Better than 3% relative standard deviation at 10-20 times the minimum detectability, measured over at least 20 consecutive runs

### Hardware configuration

- Single channel dual detector configuration, based on the 490-GC
- Option of up to two additional GC channels using the universal  $\mu$ -TCD detector

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