

## Specifications

- Technology: Photoacoustic infrared spectroscopy with cantilever enhanced optical microphone and electrically pulsed IR source
- Simultaneous quantitative analysis of up to 9 gas compounds
- Gas cell: fully gold coated, stabilized to 50 °C
- Total gas volume: 30 ml
- Detection limits: Gas dependent, typically in the sub-ppm region
- Minimum detectable pressure variation in the sample cell:  $5.7 \times 10^{-7}$  Pa/√Hz (RMS)
- Response time: Dependent on the application and user definable sample integration time, typically from 30 seconds to few minutes
- Alarms: Multilevel concentration alarms resulting in audible and/or visual effect
- Calibration: single-point with downloadable pre-calibration files, guided calibration process
- Operating temperature: from -20 °C to +50 °C
- Operating humidity: 0-90% non-condensing
- Installation: 19" rack, 3U case
- Power: Universal 100-240 VAC, 50-60 Hz
- Power consumption: 90 W max.
- Display: TFT 5.7", VGA
- Dimensions: W: 48.4 cm x H: 13.9 cm x D: 40.5 cm
- Weight: 10 kg

For further information and to request a quotation please contact: [sales@gasera.fi](mailto:sales@gasera.fi)



## Multi-Gas Analyzer: F10



Reliable gas analysis with cantilever enhanced photoacoustic technology

[www.GASERA.fi](http://www.GASERA.fi)

## F10 Concept

The F10 is based on photoacoustic infrared technology. It has pulsed IR source and 10 distinct spectral bands in the mid-IR region defined by narrow band-pass optical filters.

Mechanical chopper is not required due to the use of an electronically pulsed IR source. High sensitivity is obtained by utilizing the patented cantilever based optical microphone technology.

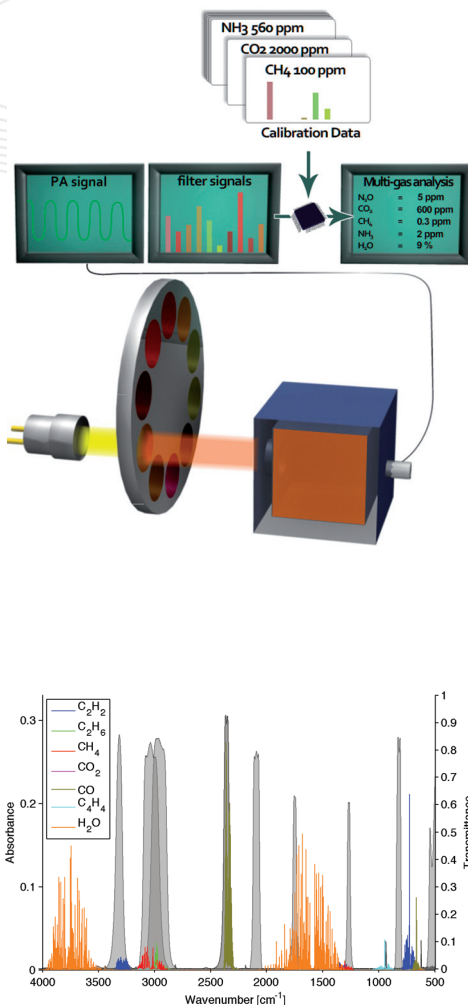
## Multi-component analysis

High selectivity is achieved by choosing up to 10 optical filters with narrow spectral bands for target gases as well as interfering gases. All installed optical filters are used with each gas compound. Several spectral regions can be used for a single gas to minimize the cross-sensitivity. Analysis is based on a modified classical least squares fit of sample response to calibration data.

Photoacoustic technology allows high sensitivity from short optical path length which has been further improved with novel model-based non-linear compensation. This provides linear dynamic range of over five orders of magnitude.

## Calibration

Calibration is performed by measuring the signal levels obtained from all optical filters for each gas. Zero-gas (e.g. nitrogen) and water vapor are always measured in the calibration procedure and compensated from the span-calibration data. A modeled non-linear response curve is loaded as a factory pre-calibration, and therefore only single-point calibration is required for obtaining linear range of over five orders of magnitude.



## Features

High selectivity, sub-ppm detection limits, wide dynamic range, tolerance for humidity, wide operational temperature range, and long calibration period make the F10 multi-gas analyzer ideal for greenhouse gas monitoring, indoor air analysis, ventilation measurements, leak detection, and industrial safety monitoring.

- Selectively measures up to 9 gases simultaneously
- Analysis from very low gas volume
- High stability and reliable analysis
- Very little regular maintenance required
- User-friendly calibration procedure
- Equipped with self test routine
- Full scale analysis without range adjustment
- High-resolution graphical display with user-friendly menus
- Wide dynamic measurement range with single point calibration
- Versatile programming of measurement tasks
- Presentation of the measurement data of all gases in graphical form
- Built in trend view for monitoring tasks, no external computer required
- No consumables required
- Equipped with standard interfaces: Ethernet, USB2.0, RS-232, and RS-485



**F10**  
GAS ANALYZER