

Gasmeter™ CR1000 FTIR Gas Analyzer



Multicomponent FTIR Gas Analyzer

Gasmeter In-lab Series includes quantitative multicomponent gas analyzers for laboratory research applications. The Gasmeter CR1000 incorporates a Fourier transform infrared, FTIR spectrometer, a temperature controlled sample cell, and signal processing electronics. Liquid nitrogen cooled MCT detector has the highest performance available.

The Gasmeter CR1000 is designed for speed and reliability. The single pass sample cell provides high optical throughput and very quick response times. As the sample cell is available for short path lengths only, it is optimal for percentage concentrations. Typically CR1000 is used for process measurements and catalyst research applications. The rugged stainless steel sample cell is typically heated up to 180 °C. Higher temperatures are available by special request.

CR-models scanning and analysis speed can be configured according to customers need.

General parameters

Measuring principle:	Fourier Transform Infrared, FTIR
Performance:	Simultaneous analysis of up to 50 gas compounds
Response time, T₉₀:	Typically < 2 s, depending on the gas flow and measurement time
Operating temperature:	5 - 30°C non-condensing
Storage temperature:	-20 - 60°C, non-condensing
Power supply:	100-115 or 230 V / 50 -60 Hz
Power consumption:	300 W maximum, continuous 150 W

Spectrometer

Resolution:	Recommended 8 cm ⁻¹ or 4 cm ⁻¹
Scan frequency:	10 scans / s or faster
Detector:	Liquid N ₂ cooled MCT
Source:	SiC, 1550 K
Optics material:	ZnSe (beamsplitter and windows)
Wave number range:	600 - 4200 cm ⁻¹

Sample cell

Structure:	Single-pass, path length 10 cm
Standard material:	Stainless steel, ss 316
Volume:	0.031 liters
Connectors:	Inlet Swagelok 6 mm Outlet Swagelok 8 mm
Gaskets:	Viton® O-rings
Temperature:	180 °C
Window material:	ZnSe, other on request

Measuring parameters

Zero point calibration:	24 hours, calibration with nitrogen (4.0 or higher N ₂ recommended)
Zero point drift:	< 2 % of measuring range per zero point calibration interval
Sensitivity drift:	None
Linearity deviation:	< 2 % of measuring range
Temperature drifts:	< 2 % of measuring range per 10 K temperature change
Pressure influence:	1 % change of measuring value for 1 % sample pressure change. Ambient pressure changes measured and compensated

Electrical connectors

Digital interface:	9-pole D-connector for RS-232 CR1000 is connected to an external computer via RS-232C cable. The external computer controls the Gasmeter analyzer.
Power connection:	Standard plug CEE-22

Gas inlet and outlet conditions

Gas temperature:	Non-condensing, the sample gas temperature should be the same as the sample cell temperature
Flow rate:	120 - 600 liters per hour
Gas filtration:	Filtration of particulates (2 µ) required
Sample gas pressure:	Ambient
Sample pump:	External, not included

Electronics

A/D converter:	Dynamic range 95 dB
Signal processor:	32-bit floating point DSP 120 MFLOPS
Computer:	External, not included

Analysis software (for external PC)

Operating system:	Windows XP
Analysis software:	Calcmeter for Windows

Options

Sample cell:	Single-pass, path length 1 cm volume 0.003 liters and 4 cm volume 0.013 liters
External PC:	Gasmeter PC
Sample cell gaskets:	Teflon® coated Viton® or Kalrez®
Sample cell material:	Inconel
Enclosure:	19" rack
LN₂ detector:	33 hours Dewar

Enclosure

Material:	Aluminium
Dimensions:	512 mm * 473 mm * 311 mm
Weight:	22 kg
CE label:	According to EMI guideline 89/336/EC

