

Gasmeter™ CR-1000



Multicomponent FTIR Gas Analyzer

GASMET IN-LAB SERIES includes quantitative multicomponent gas analyzers for laboratory research applications. The GASMET Cr-1000 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 GASMET Cr-1000 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 Cr-1000 is used for process measurements and catalyst research applications. The rugged stainless steel sample cell is typically heated up to 180 °C. Higher temperatures 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

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)
Wavenumber range:	600 - 4200 cm ⁻¹

Sample Cell

Structure:	Single-pass, path length 10 cm
Standard material:	Stainless steel, ss316
Volume:	0.031 l
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 Cr-1000 is connected to an external computer via RS-232C cable. The external computer controls the GASMET.
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 l per hour
Gas filtration:	filtration of particulates (2µ) 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:	CALCMET for Windows

Options

Sample Cell:	Single-pass, path length 1 cm volume 0.003 l and 4 cm volume 0.013 l
External PC:	GASMET PC
Sample cell gaskets:	Teflon® coated Viton® or Kalrez®
Sample cell material:	Inconell
Enclosure:	19" rack
LN2 detector:	33 hours dewar

Enclosure

Material:	Aluminium
Dimensions (mm):	512 * 473 * 311
Weight:	22 kg
CE - Label:	according to EMI guideline 89/336/EC

