

Gasmeter™ CR-4000



Multicomponent FTIR Gas Analyzer

GASMET IN-LAB SERIES includes quantitative multicomponent gas analyzers for laboratory research applications. The GASMET Cr-4000 incorporates a Fourier Transform Infrared, FT-IR spectrometer, a temperature controlled sample cell, and signal processing electronics. Liquid nitrogen cooled MCT detector has the highest performance available.

The GASMET Cr-4000 is designed for highest sensitivity and speed. It is an ideal tool for example for emissions measurements, catalyst research applications, or to measure any compounds in wet corrosive gas mixtures. The longer path lengths of the sample cell provide low detection limits. The gold coated sample cell can be heated up to 180°C.

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 < 120 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:	Multi-pass, fixed path length 2.5 m
Material:	100 % Rhodium coated aluminium
Mirrors:	fixed, protected gold coating
Volume:	0.4 l
Connectors:	Inlet Swagelok 6 mm Outlet Swagelok 8 mm
Gaskets:	Viton® O-rings
Temperature:	180 °C, maximum
Window material:	ZnSe

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-4000 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:	Multi-pass, fixed path length 5.0 m or 9.8 m
Pressure measurement:	Inside sample cell
External PC:	GASMET PC
Sample cell gaskets:	Teflon® coated Viton® or Kalrez®
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

