

# Gasmet™ DX-4000



## Multicomponent FTIR Gas Analyzer

GASMET ON-SITE SERIES includes portable multicomponent gas analyzers for demanding applications. The GASMET Dx-4000 incorporates a Fourier Transform Infrared, FTIR spectrometer, a temperature controlled sample cell, and signal processing electronics. The analyzer offers versatility and high performance for all users.

The GASMET Dx-4000 is designed for on site measurements at low concentrations. It is an ideal tool to measure trace concentrations of pollutants in wet, corrosive gas streams. The sample cell can be heated up to 180 °C. Sample cell absorption path length is selected according to the application.

The GASMET Dx-4000 allows simple calibration using only single component calibration gases. The user can easily configure the analyzer for a new set of compounds.

### General parameters

<b>Measuring principle:</b>	Fourier Transform Infrared, FTIR
<b>Performance:</b>	Simultaneous analysis of up to 50 gas compounds
<b>Response time, T<sub>90</sub>:</b>	Typically < 120 s, depending on the gas flow and measurement time
<b>Operating temperature:</b>	Short term 20 ± 20°C long term 15 - 25°C non condensing
<b>Storage temperature:</b>	-20 - 60°C, non condensing
<b>Power supply:</b>	100-115 or 230 V / 50 -60 Hz
<b>Power consumption:</b>	300 W

### Spectrometer

<b>Resolution:</b>	8 cm <sup>-1</sup> or 4 cm <sup>-1</sup>
<b>Scan frequency:</b>	10 scans / s
<b>Detector:</b>	Peltier cooled MCT
<b>Source:</b>	SiC, 1550 K
<b>Beamsplitter:</b>	ZnSe
<b>Window material:</b>	ZnSe
<b>Wavenumber range:</b>	900 - 4 200 cm <sup>-1</sup>

### Sample Cell

<b>Structure:</b>	Multi-pass, fixed path length 5.0 m
<b>Material:</b>	100 % Rhodium coated aluminium
<b>Mirrors:</b>	Fixed, protected gold coating
<b>Volume:</b>	0.4 l
<b>Connectors:</b>	Inlet Swagelok 6 mm Outlet Swagelok 8 mm
<b>Gaskets:</b>	Viton® O-rings
<b>Temperature:</b>	180 °C, maximum
<b>Window material:</b>	BaF <sub>2</sub>

### Measuring parameters

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

### Electrical Connectors:

<b>Digital Interface:</b>	9-pole D-Connector for RS-232 Analyzer is connected to an external computer via RS-232C cable. The external computer controls the GASMET. Remote control connection for Portable sampling unit
<b>Power connection:</b>	Standard plug CEE-22

### Gas Inlet and Outlet Conditions

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

### Electronics

<b>A/D Converter:</b>	Dynamic range 95 dB
<b>Signal Processor:</b>	32-bit floating point DSP 120 MFLOPS speed
<b>Computer:</b>	External, not included

### Analysis Software (for external PC)

<b>Operating system:</b>	Windows XP
<b>Analysis software:</b>	CALCMET for Windows

### Options

<b>Sample Cell:</b>	Multi-pass, fixed path length 2.5 m or 9.8 m
<b>Analog Signals (ext PC):</b>	PCMCIA card for 8 analog inputs
<b>Sample cell gaskets:</b>	Teflon® coated Viton® or Kalrez®
<b>Power supply:</b>	12 VDC (Replace remote control for portable Sampling Unit, only for 50 °C models)
<b>Power supply cables:</b>	12V cables with battery clips or cigarette lighter connector
<b>Trolley:</b>	Wheeled cart for the analyzer and laptop computer

### Enclosure

<b>Material:</b>	Aluminium
<b>Dimensions (mm):</b>	390 * 445 * 164
<b>Weight:</b>	13.9 kg
<b>CE - Label:</b>	According to EMI guideline 89/336/EC

