

Gasmet™ Dx-4030



The Portable FTIR Gas Analyzer

The Gasmet Dx-4030 is the first truly portable FTIR gas analyzer in the world. The lightweight analyzer module is located in durable Teflon – coated backpack. The Gasmet DX – 4030 analyzer module houses a Fourier Transform Infrared (FTIR) spectrometer, Rhodium-Gold coated sample cell and signal processing electronics. The sample gas is extracted into the sample cell with a pistol-type probe, which features a built-in pump and a particle filter. Hence no sample preparation is needed. The Dx-4030 is battery operated with an operating time of 2.5 hours with one charge.

The Gasmet Dx-4030 is designed for on-site measurements of different compounds (both organic & inorganic) at low concentrations in ambient air. Typical usage areas include industrial hygiene and emergency response situations. Analysis results of up to 25 pre-calibrated compounds are displayed on screen of an industrial-grade PDA.

Optionally, the analyzer can be connected with a laptop PC for extended analysis capability (e.g. identification of unknown compounds with library spectra).

There are no consumable parts that would need replacing on regular basis. In addition, due to FTIR technology, the calibrations remain very stable. Hence no span calibrations are needed. Also, cross-interferences (i.e. interference from other gases) are automatically compensated in the analysis algorithm during the calculation of the results.

To sum up, the Gasmet Dx-4030 provides a very cost-effective, easy-to-use solution for multicomponent gas analysis in ambient air.

General parameters

Measuring principle: Fourier Transform Infrared, FTIR
Performance: Simultaneous analysis of up to 25 gas compounds (PDA), 50 gas compounds with optional Calcmeter – software
Response time, T₉₀: Typically < 120 s, depending on the gas flow and measurement time
Operating temperature: Ambient temperature -15 - 50°C, non condensing
Storage temperature: -20 - 60°C, non condensing
Power supply: 12 VDC or 115 / 230 VAC

Spectrometer

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

Sample Cell

Structure: Multi-pass, fixed path length 9.8 m
Material: 100 % Rhodium coated aluminum
Mirrors: Fixed, protected gold coating
Volume: 0.4 l
Temperature: ambient



Measuring parameters

Zero point calibration: 24 hours
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: Bluetooth protocol & RS-232
 The analyzer is connected to a PDA with a Bluetooth connection. The PDA provides the analysis results.

Gas Inlet and Outlet Conditions

Gas temperature: Ambient temperature (0 – 50°C), non-condensing
Flow rate: 120 – 600 l per hour
Gas filtration: Filtration of particulates included in the sample probe
Sample gas pressure: Ambient
Sample pump: In the sample probe, for ambient air only

Electronics

A/D Converter: Dynamic range 95 dB
Signal Processor: Two 32-bit floating point DSP's 120 MFLOPS speed

Analysis Software (PDA)

Operating system: Windows CE 5.0
Analysis software: Calcmeter Lite

Options

Software: Calcmeter Professional for additional analysis functions (identification of unknowns etc.). Laptop PC + Windows XP required

Enclosure

Material: Aluminium
Weight: 11.5 kg
CE - Label: According to EMI guideline 89/336/EC

All technical information may change without notice.