



## • OPS Open Path Air Monitoring System

Compact, versatile and rugged air monitoring system, designed to detect and measure a wide range of compounds simultaneously.

### Features

- Rugged and reliable
- Based on industry-proven RockSolid™ interferometer
- Lightweight, portable design
- Easy to set up and dismantle
- Versatile hardware to meet your needs
- Real-time multi component analysis
- Internal source
- No need for liquid nitrogen

The system is based on the method of Fourier-transform infrared spectroscopy (FT-IR). Infrared radiation is modulated by an interferometer and transmitted to an array of retroreflectors positioned at a distance of typically several hundred meters using a telescope. The reflected radiation is received by the same telescope and focused onto a detector.

The large spectral range allows identification and quantification of a wide range of compounds. An important application of the system is air monitoring at industrial, construction or municipal sites. In addition, the OPS allows high-precision quantification of atmospheric gases.



Open Path Monitoring System OPS



Interferometer/Telescope Unit



Retroreflector Array

### Performance:

Spectral range:

650 – 5000  $\text{cm}^{-1}$  with standard MCT detector (other ranges optional)

Spectral rate:

Up to 4 scans/s at 1  $\text{cm}^{-1}$  resolution, two-sided interferograms, 5 scans/s at 0.5  $\text{cm}^{-1}$  resolution, single-sided interferograms (option)

Resolution:

Better than 1  $\text{cm}^{-1}$ , option: Better than 0.5  $\text{cm}^{-1}$

Wavenumber accuracy:

Better than 0.01  $\text{cm}^{-1}$

### Optical system:

Design:

Rugged, compact, sealed and desiccated housing

IR-source:

Air cooled MIR radiation source, long lifetime

Interferometer:

RockSolid™, proprietary highly stable and vibration insensitive interferometer system, permanently aligned, mechanical, frictionless bearing, selectable mirror velocities

Detector:

MCT detector with Stirling cooler (other detectors optional)

Telescope:

305 mm (12") send/receive telescope

Retroreflector array:

500 mm diameter (ca.), mounted in a 610 x 610 x 160 mm (ca.) NEMA 4 box with lid

QA gas cell:

Gas cell for quality assurance (instrument line shape, calibration)

### Electronics:

Data acquisition:

Integrated acquisition processor for PC-independent data acquisition, digital bench control, 24 bit A/D converter

Automation:

Microprocessor controlled optical bench, digital speed control

### System/Integration:

PC:

Different configurations available (standard, semi-ruggedised, ruggedised)

Interface:

Ethernet

Software:

Gas analysis software: OPUS RS/OPS

Spectral Database:

Reference spectra: Access to > 420 spectra

Tripods:

Tripods (standard, geared) for interferometer system and retroreflector

Automation:

Software controlled and programmable motorized pan and tilt head

### Dimensions:

Interferometer/telescope unit:

1150 x 350 x 385 mm

Mass:

43 kg

### Applications

- Fenceline monitoring (safety)
- Emissions monitoring
- Research
- High-precision quantification
- Leak detection including compound identification
- Engine exhaust analysis



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