OPSIS®

opsis.se

Ambient
Air Quality Monitoring

Urban Air Quality Monitoring

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Ambient

Air Quality Monitoring

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To measure air quality in the ambient air can be a challenge. The monitoring site needs to be representative and not dependant on changes in local traffic. A large number of gaseous components need to be measured with high accuracy and high availability.

The OPSIS DOAS system is different and provides the user with a fast system that gives high availability at low cost.

The OPSIS system is based on a non-contact DOAS method, using an optical path. The optical light is transferred in an optical fibre to the analyser and one analyser can operate several paths.

A single OPSIS system can measure all relevant gaseous components, such as NO, NO_2, SO_2, O_3, BTX, HNO_2, NO_3, formaldehyde, and NH_3.

RETURN OF INVESTMENT

The cost of investing in an OPSIS system is small compared to the money that are spent on maintaining old and complex conventional analysers.

The OPSIS system has low cost of ownership based on few moving parts, long intervals between calibrations, easy operation and low energy consumption.

TEST AND APPROVALS

The OPSIS system has been tested and approved by a number of international, recognized institutes and authorities, for example TÜV and MCERTS.

The system meets and exceeds the requirements in U.S. EPA and EN 15267.

OPSIS PRODUCT PORTFOLIO

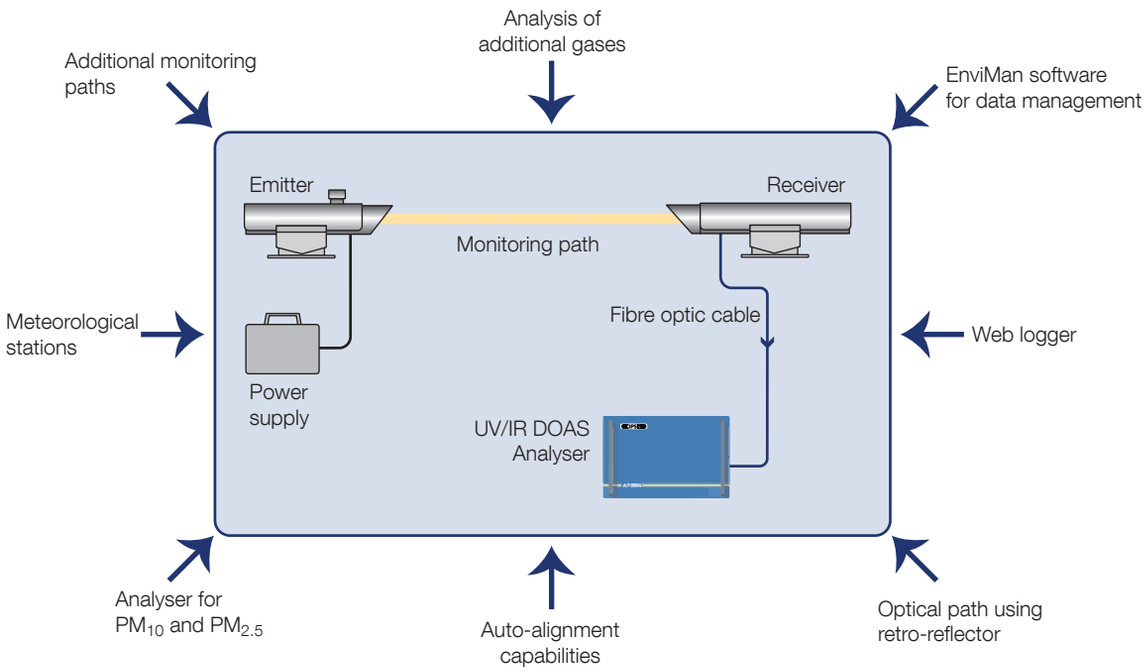
OPSIS has a full product portfolio for measurement of gases in a range of applications. The basic air quality monitoring system can be extended to include a range of additional features, such as

- EnviMan software for data management,
- meteorological stations,
- analyser for PM_{10} and $PM_{2.5}$,
- manual and automatic calibration,
- auto-alignment capabilities,
- automatic dust sampler of $PM_{2.5}$ and PM_{10},
- additional monitoring paths,
- analysis of additional gases, and
- web transfer unit that enables clients to download data automatically and simultaneously, independent of where they are located.

For further information, please visit www.opsis.se.

An OPSIS system monitoring the urban air quality

SYSTEM OVERVIEW



PERFORMANCE DATA

(typical data which may vary depending on application)

Compound	Max. measurement range[1] (500 m path)[2]	Lowest measurement range according to EN 15267	Min. detectable quantities (monitoring path 500 m, measurement time 1 min.)
AR500/AR520 UV/IR DOAS Series Analyser			
NO_2	0–2000 µg/m³	0–400 µg/m³	1 µg/m³
SO_2	0–5000 µg/m³	0–700 µg/m³	1 µg/m³
O_3	0–1000 µg/m³	0–360 µg/m³	2 µg/m³
NO	0–2000 µg/m³[3]	0–100 µg/m³[4]	2 µg/m³
NH_3	0–500 µg/m³[4][3]	0–100 µg/m³[4]	2 µg/m³
NO_3	0–500 µg/m³	0–10 µg/m³[4]	0.1 µg/m³
HNO_2	0–2000 µg/m³	0–100 µg/m³[4]	1 µg/m³
Formaldehyde	0–2000 µg/m³	0–100 µg/m³[4]	2 µg/m³
Benzene	0–2000 µg/m³[4]	0–10 µg/m³	1 µg/m³
Toluene	0–2000 µg/m³	0–10 µg/m³[4]	1 µg/m³
p-, m-Xylene	0–2000 µg/m³	0–10 µg/m³[4]	1 µg/m³
AR550 FTIR DOAS Series Analyser			
CO	0–1000 mg/m³	0–1000 mg/m³[4]	100 µg/m³
CO_2	0–100 g/m³	0–100 mg/m³[4]	1 mg/m³
CH_4	0–100 mg/m³[3]	0–50 mg/m³[4]	50 µg/m³
H_2O	0–100% Vol.[4][3]	0–50 g/m³[4]	0.1% Vol.

[1] Higher measurement ranges are possible depending on application and compound.
[2] Recommended monitoring path length: 300 to 800 m.
[3] Based on 200 m path. Recommended monitoring path length: 100 to 200 m.
[4] Lowest measurement range.

- Max. length of fibre optic cable: please refer to product sheet P9.

Accuracy
Better than 2% of measured value or equal to the detection limit (whichever is greater).

Span drift
Less than 2% per year.
Please, refer to QAL1 documents.

Zero drift
Less than 2% of measurement range per year.
Please, refer to QAL1 documents.

Linearity error
Less than 1% of measurement range.

FACTORY TESTED SYSTEMS
WITH DELIVERY ON TIME.

Ambient Air Quality Monitoring by OPSIS

Automatic alignment

One analyser for all gases

Cost-effective, open-path technology

High availability

Representative path-integrated data

Direct monitoring of NO_2

Gas calibration only once per year

Low energy consumption

Operates with a minimum of maintenance

Approved by MCERTS, TÜV, U.S. EPA, and Chinese EPA

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Please contact your OPSIS supplier to discuss your particular system requirements, including the compounds you wish to monitor. Separate product and other industrial application sheets are available. Specifications subject to change without notice.

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