



Ambient  
Air Quality Monitoring

# Monitoring at Ports

# Ambient Air Quality Monitoring Monitoring at Ports

Ambient air quality monitoring at an industrial port is difficult. Due to the size of the port and the different activities that generate emissions a single monitoring point will not give a correct picture of the gaseous compounds.

The OPSIS system is different compared to other systems on the market and provides ports with an accurate analyser that will operate with a minimum of maintenance.

The OPSIS open-path technology uses a beam of light to detect concentration of the gases. The light beam can be placed at different locations around the port thus giving a correct picture of the emission levels at all wind directions.

The measurement can be used to determine emissions of SO<sub>2</sub> from ships.

## RETURN ON INVESTMENT

The cost of maintaining an OPSIS open-path system is small compared to conventional point monitors.

Long time intervals between calibration, stable and reliable measurement results and coverage of a large area contributes to make the investment successful.

## 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.

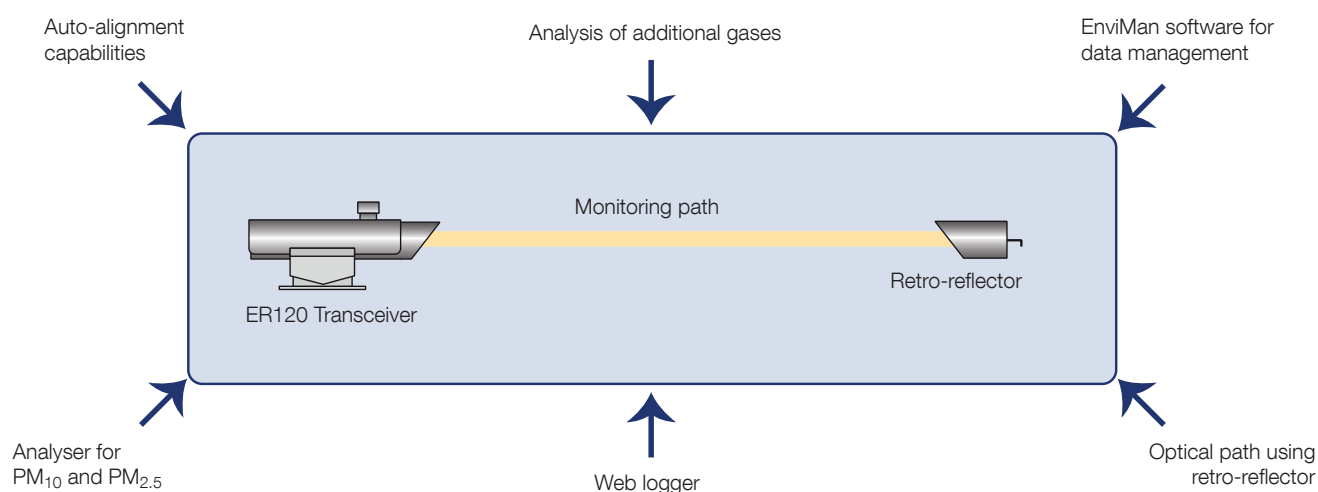
## THE OPSIS PRODUCT PORTFOLIO

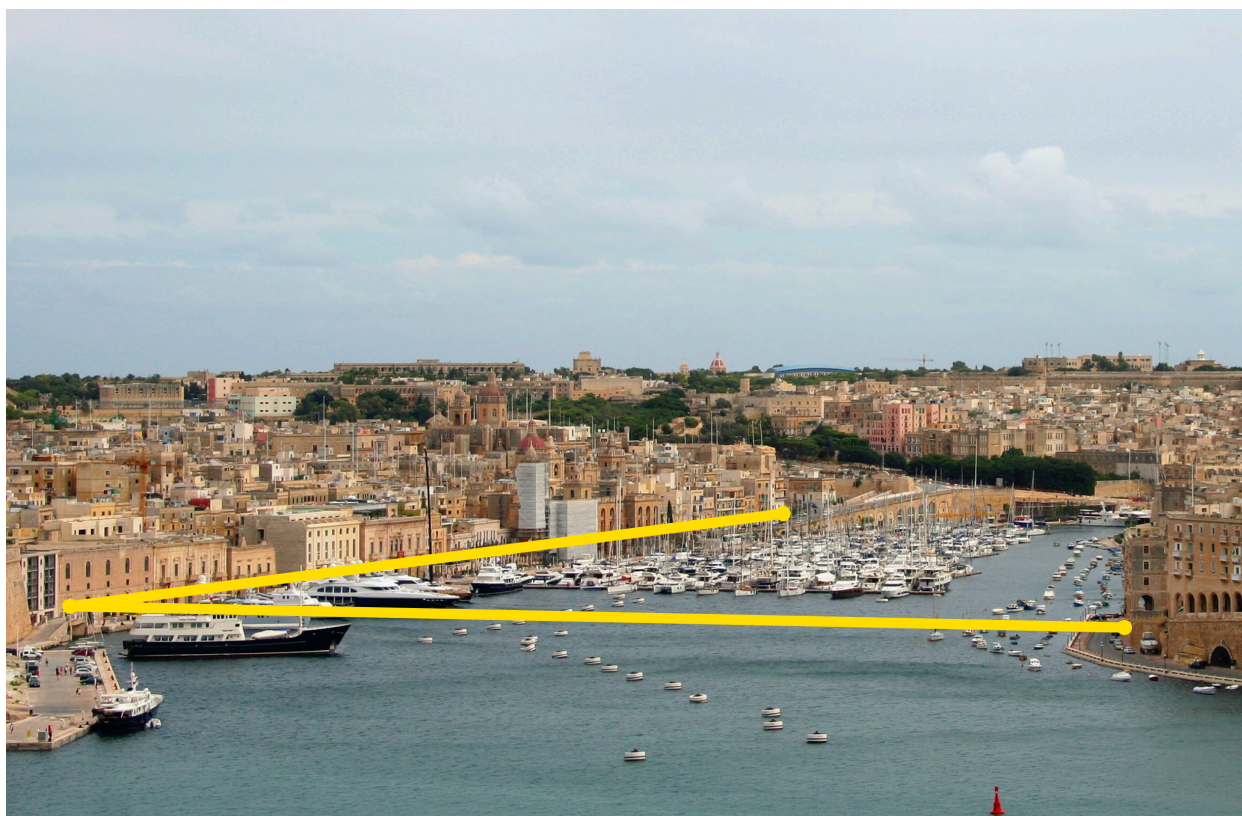
OP SIS product portfolio includes monitoring systems for gases based on open-path technology using DOAS, FTIR and TDL, measurement of PM<sub>10</sub> and PM<sub>2.5</sub> using beta attenuation and environmental emissions inventory and modelling using OPSIS Enviman Software. Data logging systems and data presentation from OPSIS runs on the internet as well as in dedicated computers.

For further information, please visit [www.opsis.se](http://www.opsis.se).

**QAL 1 CERTIFICATION:**  
BEST PERFORMANCE  
LONGEST CALIBRATION INTERVAL

## SYSTEM OVERVIEW





With OPSIS open-path monitoring solution, emissions from different activities at ports are detected.

## PERFORMANCE DATA

(typical data which may vary depending on application)

Compound	Max. measurement range <sup>(1)</sup> (500 m path) <sup>(2)</sup>	Lowest measurement range according to EN 15267	Min. detectable quantities (monitoring path 500 m, measurement time 1 min.)
<b>AR500/AR520 UV/FTIR DOAS Series Analyser</b>			
CO <sub>2</sub>	0–100 000 ppm	0–10 000 ppm	50 ppm
NO <sub>2</sub>	0–2000 µg/m <sup>3</sup>	0–400 µg/m <sup>3</sup>	1 µg/m <sup>3</sup>
O <sub>3</sub>	0–1000 µg/m <sup>3</sup>	0–360 µg/m <sup>3</sup>	2 µg/m <sup>3</sup>
SO <sub>2</sub>	0–5000 µg/m <sup>3</sup>	0–700 µg/m <sup>3</sup>	1 µg/m <sup>3</sup>

<sup>(1)</sup> Higher measurement ranges are possible depending on application and compound.

<sup>(2)</sup> Recommended monitoring path length: 300 to 800 m.

### 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.

# Ambient Air Quality Monitoring by OPSIS

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Can detect SO<sub>2</sub> and CO<sub>2</sub> emissions from ships

One analyser for all gases

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.

## UK & Ireland Distributor



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