

Internationally Approved
EN 15267 Certified



Continuous Emissions Monitoring
and Process Control

Raw-gas Monitoring for Scrubber Optimizing

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Continuous Emissions Monitoring and Process Control

Raw-gas Monitoring for Scrubber Optimizing

Process control of a flue gas cleaning system can be a challenge due to high temperature, corrosive gases and high dust load. The response time must be within seconds.

To use an extractive gas sampling system for this application will require a lot of maintenance and still not reaching the technical requirements.

The OPSIS cross-stack system is different and provides the user with an analyser that will operate with a minimum of maintenance.

The OPSIS system is based on a non-contact UV/FTIR/TDL method using an optical path that can operate across the duct.

The response time for an OPSIS system is only a few seconds.

A single OPSIS system can measure HCl and SO₂ for acid scrubber applications as well as NO and NH₃ for DeNOx applications.

QAL 1 CERTIFICATION:
BEST PERFORMANCE
LONGEST CALIBRATION INTERVAL

RETURN OF INVESTMENT

The return of investment for optimizing a scrubber is given by the amount of scrubbing material that can be reduced. Examples from different installations show that the reduction of scrubbing material will pay for the investment in a short period of time.

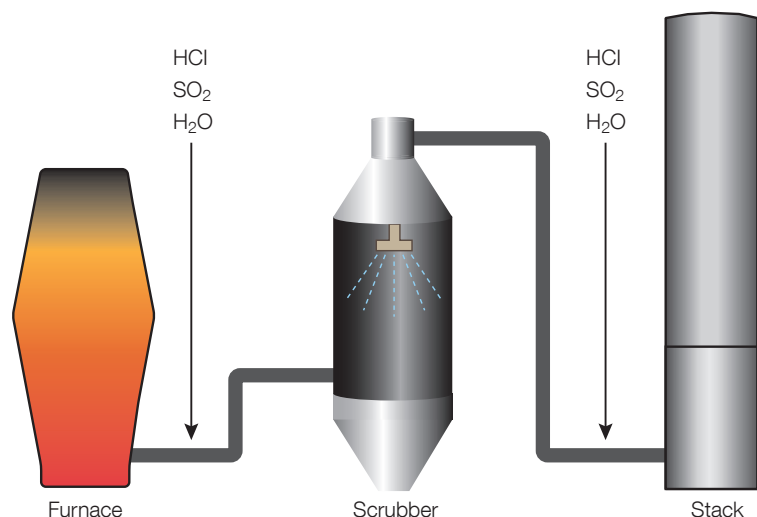
TEST AND APPROVALS

The OPSIS system has been tested and approved by a number of internationally recognized institutes and authorities. The system meets the European directive for power plants and is approved by German TÜV, British MCERTS and U.S. EPA. Full details are available on request.

OPSIS PRODUCT PORTFOLIO

OPSIS has a full product portfolio for measurements of gases in an incinerator. It includes complete CEM systems according to the European waste directive, TDL systems for measuring NH₃ in NO_x scrubbers, O₂ analysers, and Hg analysers.

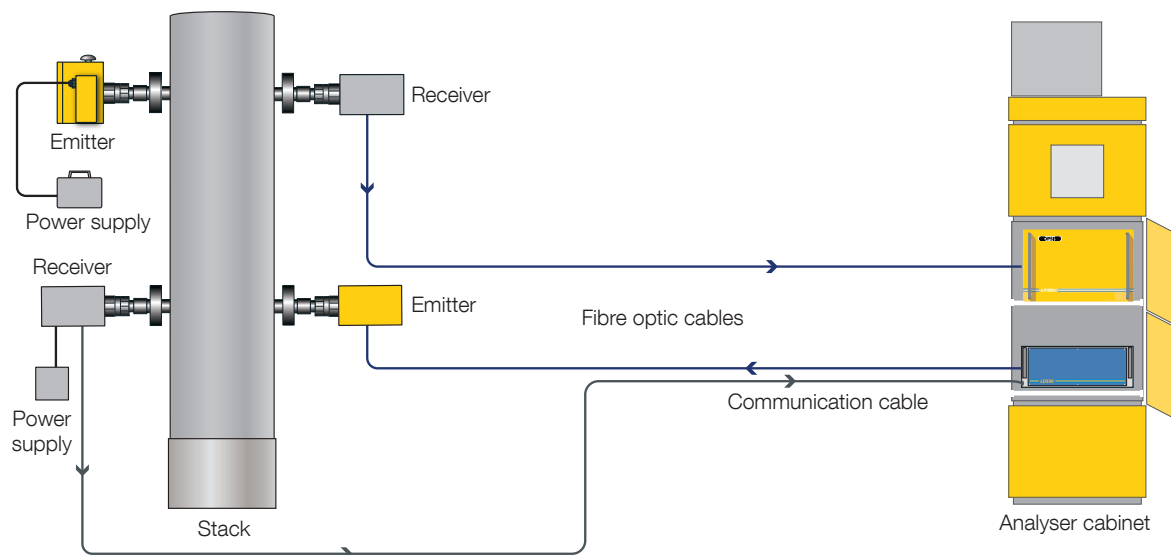
For further information, please visit www.opsis.se.



The measurement is made by a cross-stack optical sensor. The system can operate in high dust load and high temperature.

SYSTEM OVERVIEW

An OPSIS system layout for raw-gas monitoring.



PERFORMANCE DATA

(typical data which may vary depending on application)

Compound	Typical measurement range (1 m path) ⁽¹⁾	Lowest measurement range according to EN 15267	Min. detectable quantities (monitoring path 1 m, measurement time 5 sec.)
UV/IR DOAS Analyser Models AR600 / AR602Z / AR602Z/Hg / AR602Z/N / AR602Z/NHg / AR620			
NO ⁽²⁾	0–2000 mg/m ³	0–150 mg/m ³	1 mg/m ³
SO ₂	0–100% Vol.	0–75 mg/m ³	0.5 mg/m ³
NH ₃ ⁽³⁾	0–1000 mg/m ³	0–10 mg/m ³	0.5 mg/m ³
H ₂ O	0–100% Vol.	0–30% Vol.	0.1% Vol.
NO ₂	0–100% Vol.	0–20 mg/m ³	0.5 mg/m ³
FTIR DOAS Analyser Models AR650 / AR650/N / AR650/NHF			
HCl	0–100% Vol.	0–15 mg/m ³	0.5 mg/m ³
CO	0–100% Vol.	0–75 mg/m ³	2 mg/m ³
H ₂ O	0–100% Vol.	0–30% Vol.	0.1% Vol.
NH ₃	0–100% Vol.	0–10 mg/m ³⁽⁴⁾	2 mg/m ³
CO ₂	0–100% Vol.	0–20% Vol.	0.1% Vol.
CH ₄	0–100% Vol.	0–20 mg/m ³	0.5 mg/m ³
LD500 Laser Diode Gas Analyser			
HCl	0–100% Vol.	0–15 mg/m ³⁽⁴⁾	0.5 mg/m ³
H ₂ O	0–100% Vol.	0–30% Vol. ⁽⁴⁾	0.5% Vol.
NH ₃	0–100% Vol.	0–10 mg/m ³⁽⁴⁾	0.5 mg/m ³

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.

⁽¹⁾ This data refers to a light path of 1 m. For longer paths the maximum range is proportionally smaller.

Products are available to create shorter paths in very wide stacks.

⁽²⁾ Maximum SO₂ concentration: 5 g/m³ × m.

⁽³⁾ Maximum SO₂ concentration: 500 mg/m³ × m.

⁽⁴⁾ Lowest measurement range.

- Recommended monitoring path length: 1 to 5 m.
- After wet scrubbers or when the particulate concentration is high, the monitoring path length may have to be reduced.
- Max. length of fibre optic cable: please refer to product sheets P9 and P16.

Continuous Emissions Monitoring and Process Control by OPSIS

Cost savings by reducing consumption of scrubbing material

Fast and accurate monitoring of SO₂, HCl, NO, and NH₃

Direct cross-stack measurements (no sampling system required)

Best performance according to QAL 1 certification

Longest calibration interval according to QAL 1 certification

Automatic QAL 3 check as option

Low energy consumption

Gas calibration only once per year

Internationally approved

Thousands of systems installed worldwide

Serviced by highly skilled service network

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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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