OPSIS®

opsis.se

Air Quality Monitoring
and Continuous Emissions Monitoring

Aluminium Smelters

Atut Sp. z o.o.
ul. B. Prusa 8, 20-064 Lublin
tel./fax: 081 740 33 45
e-mail: info@atut.lublin.pl
www.atut.lublin.pl

Air Quality Monitoring
and Continuous Emissions Monitoring

Aluminium Smelters

Process control and emissions monitoring in an aluminium smelter can be a challenge due to the high concentrations of HF. To use an extractive system in this environment will demand a lot of maintenance.

The OPSIS DOAS system is different and provides aluminium smelters with an accurate analyser that will operate with a minimum of maintenance. The OPSIS DOAS system is based on a non-contact method using an optical measurement path that can operate across the duct.

The optical light is transported in an optical fibre to the analyser and one analyser can operate several paths.

A single OPSIS system can measure all relevant gas components such as HF, NO_x, SO_2, CO and CO_2.

OPSIS has three specific application possibilities in aluminium smelters:

1. The first is monitoring in large indoor work areas, the pot rooms, where the system provides a long, open-light path. A benefit is that the OPSIS system ignores the solid fluoride which often distorts analytical results obtained by other methods.
2. The second application is monitoring across a stack or duct. Being a non-contact method, which does not require sample extractions, OPSIS is well suited for harsh stack environments.
3. The third application is background monitoring near the plant.

RETURN OF INVESTMENT

The cost of investing in an OPSIS system is small compared to the amount of money that are spent on maintaining extractive measuring systems.

Many aluminium smelters will have to install monitoring systems to meet the environmental requirements. Using the OPSIS system for process control will optimize the process and reduce costs.

TEST AND APPROVALS

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

OPSIS PRODUCT PORTFOLIO

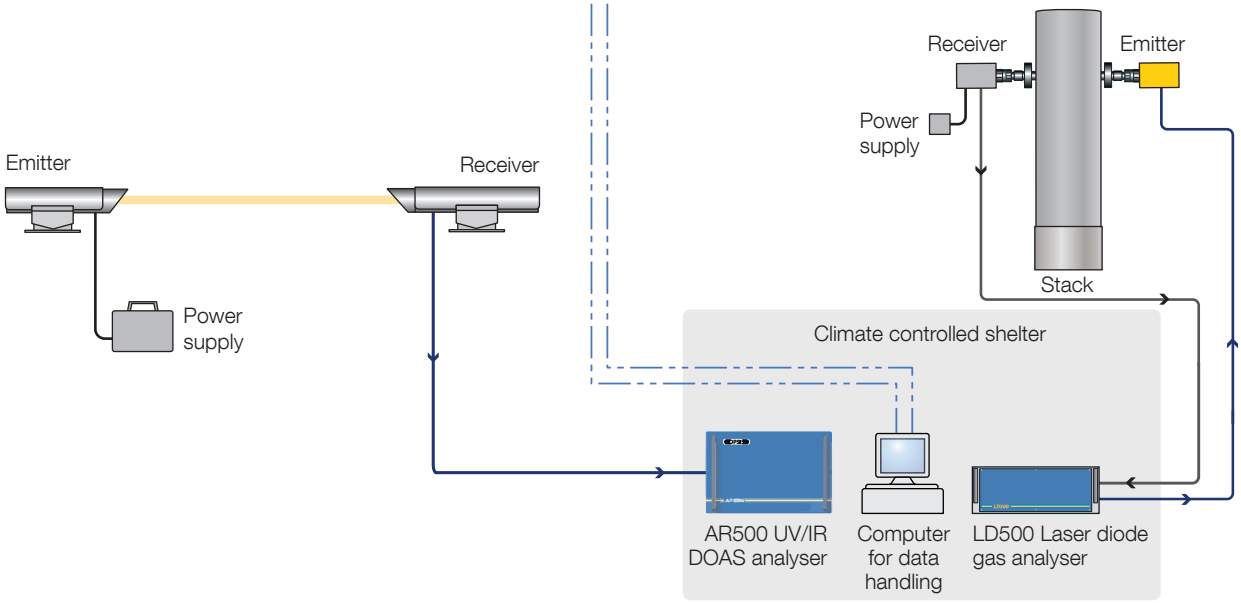
OPSIS has a full product portfolio for measurements of gases. It includes complete CEM systems according to the European waste directive, TDL systems, oxygen analysers, and Hg analysers.

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

QAL 1 CERTIFICATION:
BEST PERFORMANCE
LONGEST CALIBRATION INTERVAL

SYSTEM OVERVIEW

An OPSIS installation monitoring in the potroom and in the stack in an aluminium smelter



PERFORMANCE DATA

(typical data which may vary depending on application)

Potroom and/or Ambient Environmental Monitoring[1]

Compound	Max. measurement range (500 m path)	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			
HF	0–1000 mg/m³	0–500 µg/m³[3][4]	20 µg/m³
NO_2	0–100% Vol.	0–400 µg/m³	1 µg/m³
SO_2	0–100% Vol.	0–700 µg/m³	1 µg/m³
AR550 FTIR DOAS Series Analyser			
HF	0–100% Vol.	0–20 µg/m³[4]	0.1 µg/m³
LD500 Laser Diode Gas Analyser			
HF	0–100% Vol.	0–20 µg/m³[4]	0.1 µg/m³
H_2O	0–100% Vol.	0–10 g/m³[4]	0.1 g/m³
CH_4	0–100% Vol.	0–10 mg/m³[4]	0.1 mg/m³

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.

Emissions Monitoring[2]

Compound	Max. measurement range (1 m path)	Lowest measurement range according to EN 15267	Min. detectable quantities (monitoring path 1 m, measurement time 30 sec.)
UV/IR DOAS Analyser Models AR600 / AR602Z / AR602Z/Hg / AR602Z/N / AR602Z/NHg / AR620			
SO_2	0–100% Vol.	0–75 mg/m³	0.5 mg/m³
H_2O	0–100% Vol.	0–30% Vol.	0.1% Vol.
HF	0–1000 mg/m³	0–100 mg/m³[3]	5 mg/m³
CO_2	0–100% Vol.	0–30% Vol.[3]	0.5% Vol.
FTIR DOAS Analyser Models AR650 / AR650/N / AR650/NHF			
H_2O	0–100% Vol.	0–30% Vol.	0.1% Vol.
HF	0–100% Vol.	0–1.5 mg/m³	0.1 mg/m³
CH_4	0–100% Vol.	0–20 mg/m³	0.5 mg/m³
CO_2	0–100% Vol.	0–20% Vol.	0.1% Vol.
LD500 Laser Diode Gas Analyser			
H_2O	0–100% Vol.	0–30% Vol.[3]	0.1% Vol.
HF	0–5000 mg/m³	0–1.5 mg/m³[2]	0.1 mg/m³

[1] Recommended monitoring path length: 100 to 1000 m.
[2] Recommended monitoring path length: 1 to 5 m.
[3] Lowest measurement range.

- After wet scrubbers or when particulate concentration averaged over 1 m is higher than 5 g/m³, the monitoring path length may have to be reduced.
- Max. length of fibre optic cable: please refer to product sheets P9 and P16.

FACTORY TESTED SYSTEMS
WITH DELIVERY ON TIME.

Air Quality Monitoring and Continuous Emissions Monitoring by OPSIS

Automatic optical alignment

Multi-gas and multi-path system

Combines the benefits of UV/IR DOAS and TDL technology

Best performance according to QAL 1 certification

Longest calibration interval according to QAL 1 certification

Automatic QAL 3 check as option

No sampling required, non-contact measurement system

Operates with a minimum of maintenance

Low energy consumption

Gas calibration only once per year

Internationally approved

Thousands of systems installed worldwide

Serviced by highly skilled service network

A08
2022 10

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.

OPSIS AB
Box 244, SE-244 02 Furulund, Sweden
+46 46 72 25 00 • info@opsis.se • www.opsis.se

Atut Sp. z o.o.
ul. B. Prusa 8, 20-064 Lublin
tel./fax: 081 740 33 45
e-mail: info@atut.lublin.pl
www.atut.lublin.pl