

Monitoring NO_x Emissions

Applied Analytics Application Note No. AN-039



Application Summary

Analytes: **NO, NO₂, NO_x** (sum of NO + NO₂)

Detector: **Model OMA-300 NO_x Analyzer**

Process Stream: **stack/flue gas**

Introduction

NO_x emissions are heavily regulated around the world, requiring that many facilities implement instrumentation to monitor these emissions and report them to local authorities. Certified CEMS packages can be enormously expensive for smaller operations; a practical and equally effective solution is the use of a standalone NO_x concentration monitor in conjunction with yearly auditing of the readings.

The OMA NO_x Analyzer continuously measures true NO_x concentration in flue/stack gas to simplify the task of emissions compliance. Providing an elegant close-coupled solution which delivers fast response without the high maintenance of cross-stack installations, the OMA is the natural choice for process operators working within a budget.

OMA Benefits

- » Continuously measures true NO_x concentration by monitoring NO and NO₂ absorbance curves
- » Totally solid state build with no moving parts — modern design for low maintenance
- » Affordable alternative to large CEMS investments
- » Optional close-coupled installation provides faster response than extraction at less cost than cross-stack

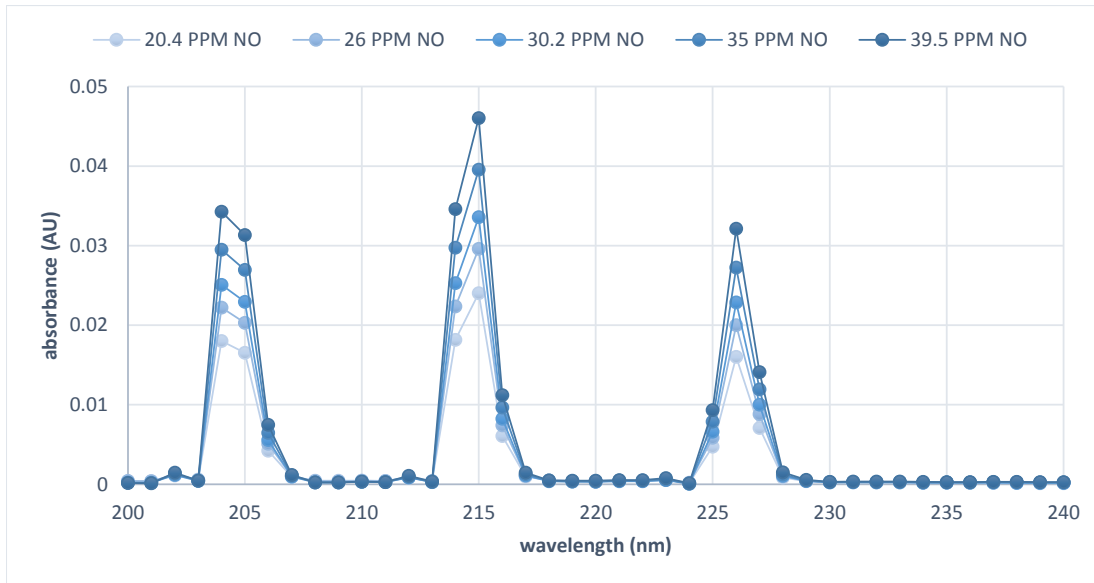
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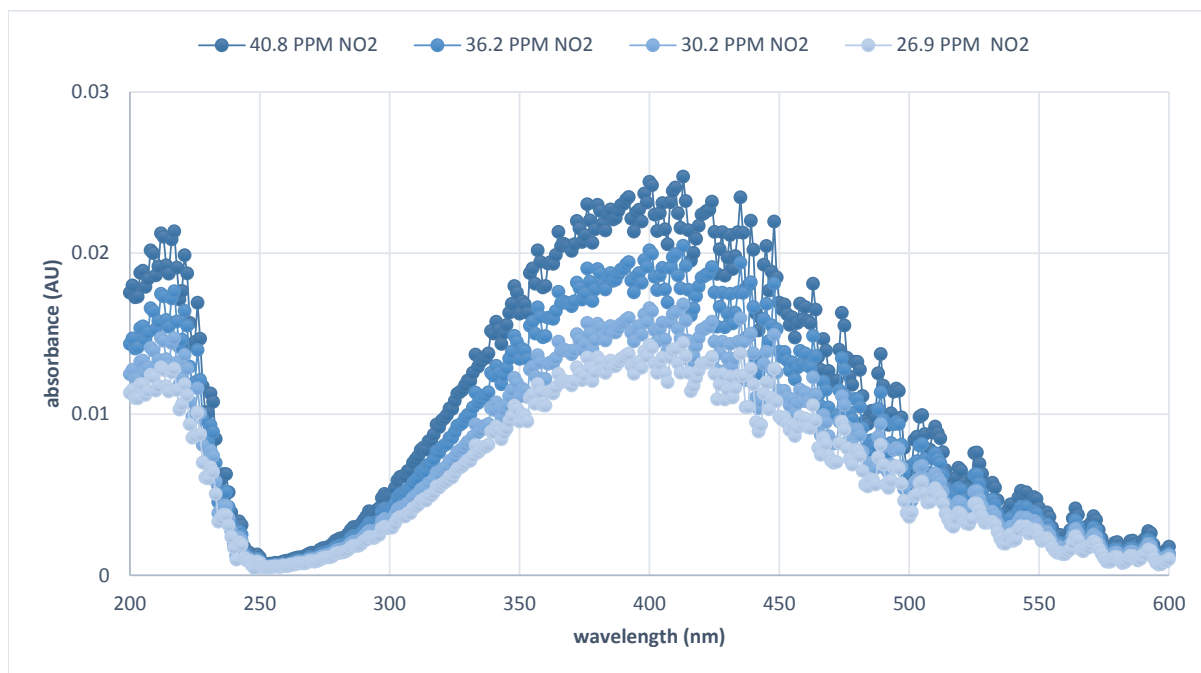
Analyte Absorbance Curves

The OMA uses a high-resolution UV-Vis spectrophotometer to detect the complete absorbance curve of each analyte.

NO absorbance



NO₂ absorbance



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Example Installation

The OMA system below is close-coupled to monitor NO_x and oxygen in stack gas:



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The specifications below represent performance of the OMA-300 Process Analyzer in a typical NO_x application.

For technical details about the OMA-300 Process Analyzer, see the data sheet:

http://www.a-a-inc.com/documents/AA_DS001A_OMA300.pdf

All performance specifications are subject to the assumption that the sample conditioning system and unit installation are approved by Applied Analytics. For any other arrangement, please inquire directly with Sales.

Subject to modifications. Specified product characteristics and technical data do not serve as guarantee declarations.

Application Data	
Performance Specifications	
Accuracy	<i>Custom measurement ranges available; example ranges below.</i>
	NO 0-100 ppm: ±1% of reading, full scale 0-500 ppm: ±1% of reading, full scale
	NO₂ 0-100 ppm: ±1% of reading, full scale 0-500 ppm: ±1% of reading, full scale
	Notes: 1. NO _x measurement specification assumes sample SO ₂ concentration < 400 ppm. This condition can be ensured by optional SO ₂ removal in sample conditioner.

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Further Reading

Subject	Location
OMA-300 Process Analyzer Data sheet	http://www.a-a-inc.com/documents/AA_DS001A_OMA300.pdf
Advantage of Collateral Data Technical Note	http://www.a-a-inc.com/documents/AA_TN-202_CollateralData.pdf
Multi-Component Analysis Technical Note	http://www.a-a-inc.com/documents/AA_TN-203_MultiComponentAnalysis.pdf



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Headquarters + Manufacturing

Applied Analytics, Inc.
Burlington, MA | sales@a-a-inc.com

Asia Pacific Sales

Applied Analytics Asia Pte. Ltd.
Singapore | sales@appliedanalytics.com.sg

India Sales

Applied Analytics (India) Pte. Ltd.
Mumbai, India | sales@appliedanalytics.in

North America Sales

Applied Analytics North America, Ltd.
Houston, TX | sales@appliedanalytics.us

Middle East Sales

Applied Analytics Middle East (FZE)
Sharjah, UAE | sales@appliedanalytics.ae

Europe Sales

Applied Analytics Europe, SpA
Milan, Italy | sales@appliedanalytics.eu

Brazil Sales

Applied Analytics do Brasil
Rio de Janeiro, Brazil | sales@aadbl.com.br

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