

Specialty Gas Analysis

Applied Analytics Application Note No. AN-060



Application Summary

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|----------------------------|--------------------------------------------------------------------------------------------|
| Analytes: | fluorine, chlorine, hydrogen sulfide, sulfur dioxide, ammonia or other gas mixtures |
| Detector: | OMA-406 Rackmount Analyzer |
| Process Stream: | specialty gas |
| Typical Measurement Range: | from ppm to percent levels |

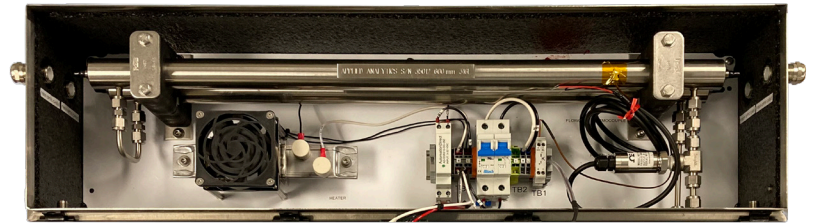
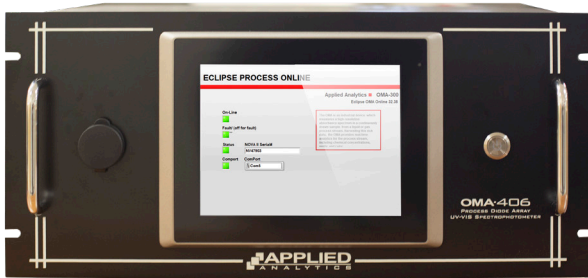
Introduction

The specialty gas industry is critical to a variety of sectors such as oil & gas, petrochemical, consumer electronics, analytical research and more. Recent growth in specialty gases can be largely attributed to the rise in demand of electronics from LEDs to semiconductors. High-purity gases play an important role in the manufacturing processes for consumer electronics. The global market was estimated at USD 10 billion in 2020 and is forecasted for continued growth due to expected increases in manufacturing.

With high purity gases, suppliers need to verify the concentration of the gas as part of their quality control before the product ships to the end user. The OMA-406 Rackmount Analyzer uses a dispersive UV spectrophotometer for measuring the concentrations of fluorine, chlorine, hydrogen sulfide, sulfur dioxide, ammonia and other gas mixtures from ppm to percent levels. The full spectrum analysis of the OMA-406 enables a single analyzer to be calibrated for multiple ranges and for multiple analytes. Specialty gas manufacturers can leverage the versatility of the OMA-406 to simplify quality control procedures.

System Benefits: OMA-406R Rackmount Analyzer

- » Continuously measures the concentrations of fluorine, chlorine, hydrogen sulfide, sulfur dioxide, ammonia or other gas mixtures using UV-Vis spectrophotometer
- » Totally solid-state build with no moving parts — modern design for low maintenance
- » Additional software benches for up to 4 chemical analytes
- » Ultra-safe fiber optic design with no sample gas inside analyzer unit — world's safest solution for this application



OMA-406 Rackmount Analyzer with Sample Conditioning System measuring F₂.

Further Reading

| Subject | Location |
|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| OMA-406R Rackmount Process Analyzer Data Sheet | https://aai.solutions/documents/AA_DS002B_OMA406R.pdf |
| OMA Series Process Analyzers Data Sheet | https://aai.solutions/documents/AA_DS001X_OMAseries.pdf |
| Multi-Component Analysis Technical Note | https://aai.solutions/documents/AA_TN-203_MultiComponentAnalysis.pdf |



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