



Advanced Solutions for Gas Monitoring.

GASMET CMM: Continuous Monitoring of Mercury with State-of-the-art Technology



Why Should You Settle for Less?

With the introduction of ever tightening legislation for emissions, new challenges are also facing the equipment that is used for continuous monitoring of trace pollutants. In the United States, the Clean Air Mercury Rule will establish strict limits for Mercury emissions from coal-fired power plants. It's essential that the Continuous Emissions Monitoring System not only provides accurate & reproducible results, but is also able to operate under extended periods of time with minimum need for maintenance.

Gasmeter Technologies* decided to meet this challenge with a novel approach together with the Technical Research Centre of Finland (VTT).** The goal of the project was to design an analyzer system that would incorporate the latest technical advances in both analytical methods and stack gas sampling. Also, latest standards & regulations were taken into account already at the design phase of the system.

The result of this joint effort is the Gasmeter CMM (Continuous Mercury Monitor), which relies on the Cold Vapor Atomic Fluorescence technology (CVAF). Whereas traditional mercury CEMS have

relied on technology such as Atomic Absorption Spectroscopy, which is susceptible to interference from other compounds such as SO₂ and HCl, CVAF is free from interference from these gases. In addition, the exceptional sensitivity of CVAF to Hg allows dilution of the sample gas, avoiding many of the problems that are commonly associated with sample treatment systems.

Right from the beginning of the R&D process, the Gasmeter CMM has been designed to exceed the requirements of U.S. EPA PS-12A and / or Part 75 provisions. For example, all system components which are in contact with the sample gas are made of inert materials. Also, all sample conditioning takes place in the sample probe – this ensures further, that sample gas composition change is virtually eliminated.

**) Gasmeter Technologies has been leading the way in bringing the advanced FTIR – measurement technology to on-line process applications, such as continuous emissions monitoring in waste incinerators & cement kilns. With more than 1000 Gasmeter analyzers supplied to date, Gasmeter Technologies is committed to provide our customers with the best possible support through our extensive network of representatives. www.gasmet.fi*

****) VTT Technical Research Centre of Finland is the biggest multi-disciplinary research organization in Northern Europe. VTT provides high-end technology solutions and innovation services. www.vtt.fi*

The Gasmet CMM Concept



APPLICATION AREAS:

- Power Plants
- Waste Incinerators
- Steel Mills
- Chlor-Alkali Plants

Sample Probe: The Gasmet CMM features a dilution sample probe for sampling of the stack gas. Included are instrument-air backflush, particle filtration and a thermal converter for converting ionic species of mercury to elemental mercury. Calibration gas can also be introduced via the probe. Controller for the sample probe is fitted inside the analyzer cabinet for easy access.

Mercury Analyzer: The analyzer unit is based on the CVAF principle. Fluorescence of atomic mercury in the sample gas is measured at 254 nm (in the ultraviolet region of light).

Calibration Unit: The calibration unit prepares both Hg^0 and $HgCl_2$ test gas. The calibration gas can be introduced to the sample probe before the particle filter, as required by the performance criteria. There is no need to use expensive calibration or dilution gases with the Gasmet CMM – regular instrument air is sufficient.

Industrial Computer: The Industrial Computer is used for calculating & storing the results. Comprehensive alarm functions are also included. There is also support for a variety of different data transfer protocols – to suit the specific needs of your plant's DCS.

Features & Advantages:

CVAF (Cold Vapor Atomic Fluorescence) measurement technology

- Continuous Measurement of total Mercury in flue gas
- Low detection limits (nanograms per Nm^3)
- Specific to mercury – virtually no interference from SO_2 and HCl

Direct & cost-effective sampling procedure

- No need for chemicals, gold amalgamation concentrators or scrubbers
- Sample gas is diluted at the probe with regular instrument air – separate (and expensive) dilution gas is not required
- Conversion of Hg^{2+} (mercury chloride) to Hg^0 with thermal catalytic conversion

Truly modular construction

- All units mounted in 19" racks – easy to service & upgrade
- Each system built to customer specification in order to meet site specific requirements
- Sampling system is not vendor specific – different options available
- Support for a wide range of data transfer protocols – both analog and digital
- Remote Connection included as standard – avoidance of unnecessary service visits & increased peace-of-mind

FOR MORE INFORMATION, PLEASE CONTACT GASMET TECHNOLOGIES OR AUTHORIZED REPRESENTATIVE:

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