

APPLICATION NOTE

Gasmeter™ in emissions monitoring applications:

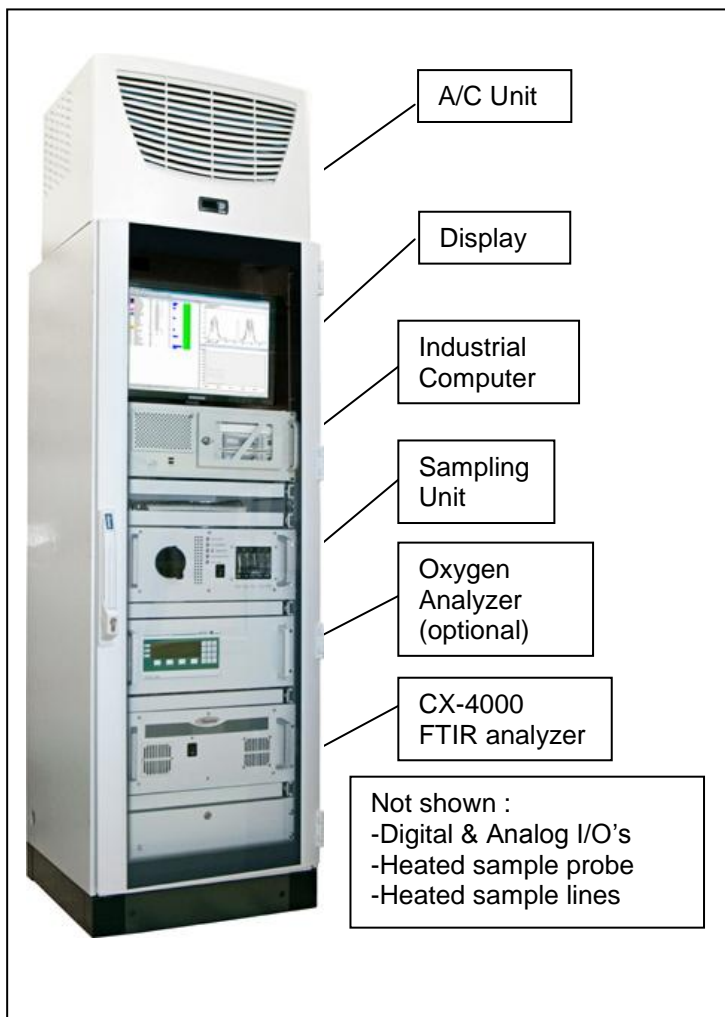
Continuous Emissions Monitoring in Waste Incineration Plants

Emissions from waste incinerators:

Waste incineration is an effective way of converting waste to energy. However, waste to energy plants are governed by strict emissions regulations. A FTIR-based Continuous Emissions Monitoring System (CEMS) such as the **Gasmeter™** CEM II can simultaneously measure all regulated emission gases. Measuring multiple gases with just a single analyzer dramatically reduces operation and maintenance costs. **Gasmeter™** CEMII can be used in various types of incinerators for different types of waste: municipal, hospital, chemical, hazardous waste, WWTP sludge, etc.

The modular construction of **Gasmeter™** CEM II simplifies service and reduces any down-time. All **Gasmeter™** CEM II are supplied as turn-key systems complete with site-specific gas calibrations, alarms, and digital I/O's ready for connecting into the emissions stream.

The **Gasmeter™** CEM II, as an automated measuring system meets the requirement of Performance Specification 15 as well as PS2 (SO₂-NO_x), PS3 (O₂-CO₂), PS4 and 4A (CO) and PS8 (VOC) as defined in 40 CFR Part 60 Appendix B.



Gasmeter™ CEM II – system

The following list of gases are typical of a waste incineration application:

GAS	TYPICAL RANGE	UNIT
H ₂ O	0-30	Vol-%
CO ₂	0-25	Vol-%
CO	0-75	mg/Nm ³
NO	0-200	mg/Nm ³
NO ₂	0-200	mg/Nm ³
N ₂ O	0-100	mg/Nm ³
SO ₂	0-75	mg/Nm ³
NH ₃	0-15	mg/Nm ³
CH ₄	0-100	mg/Nm ³
HCl	0-15	mg/Nm ³
HF	0-15	mg/Nm ³

Other HAPs can be added on request.

Gasetm™ Sampling System

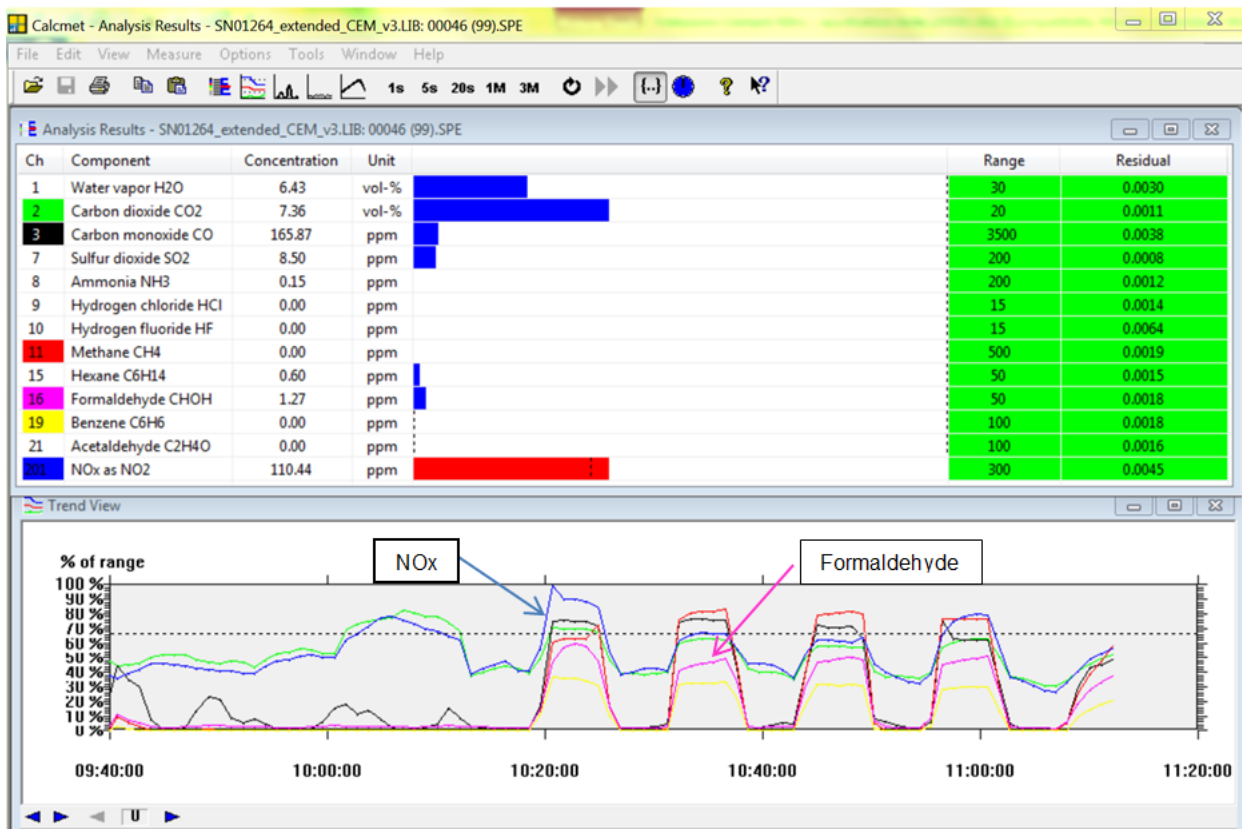


Gasetm CEM II Sampling Unit

Using hot wet extractive sampling ensures reliable results for water soluble & reactive components. All parts that are in contact with the sample gas are heated to 354°F (180 °C). The CEM II system has a number of built-in safety features; in the event of a power loss and temperature drop, the sampling stops automatically and system is flushed with zero gas to prevent any potential damage to the critical monitoring components

Application Data: Incinerator emissions

In the example illustrated below municipal solid waste is converted into green power and other valuable products in a high efficiency gasification waste-to-energy (WTE) plant. The analytical power of the **Gasetm™** CEM II system is shown by displaying and trending multiple gases simultaneously in Gasetm's Calcmet Software.



The results show very high NOx concentrations (blue line). As an interesting detail, there is also formaldehyde (CH₂O) (pink line) present in the process emissions. **Gasetm™** CEM II system can also reveal unexpected components in the sample gas, alerting the operator of a problem within the plant process.