



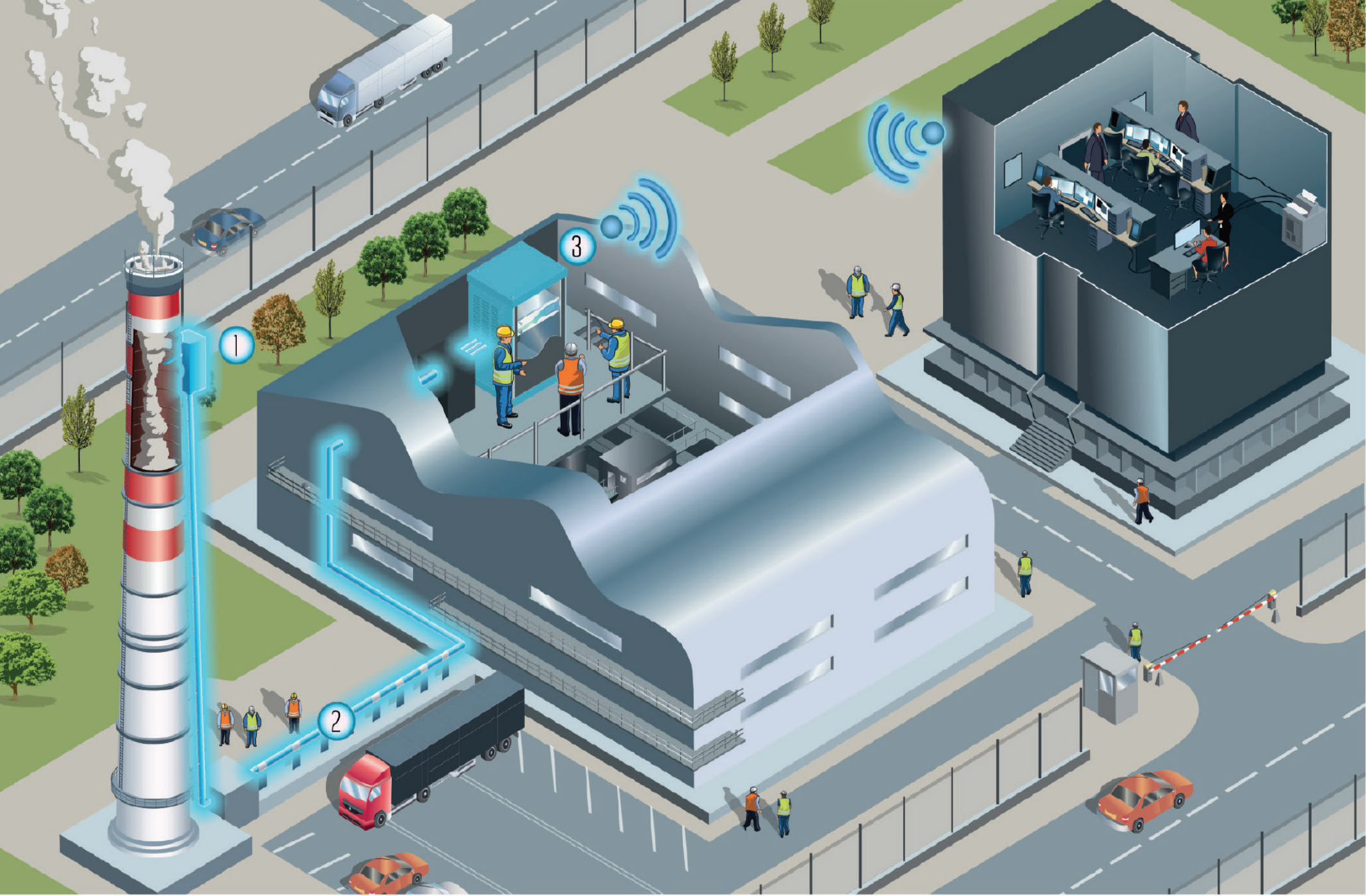
# APPLICATION NOTE




LaserCEM®

THE NEW GENERATION  
OF CEM'S ANALYZERS

-  Highly sensitive  
and selective
-  Low maintenance  
and utilities costs
-  No drift nor cross  
interferences



1 Extraction Probe 

2 Traced Line (LPS) 

3 Laser CEM® 



## WHAT ARE CEM'S AND WHY IS IT NEEDED?

A continuous emission monitoring system (CEM's) is the analytical equipment necessary for the determination of a gas concentration or emission rate of pollutants.

Around the world, CEM's are required under local regulations for either continual compliance determinations or determination of exceedances of the standards (EN 15267 in EU, EPA in USA, etc.). Industrials use CEM's gas analyzers to prove their compliance to emission regulations to environmental control authorities.

These online gas analyzers are used in industries with sensitive exhaust such as power plants, cementeries, refineries, incinerators, boilers, etc.

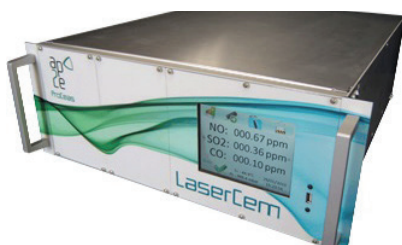
## LaserCEM® TECHNOLOGY

The LaserCEM® uses the patented OFCEAS technology, based on extractive absorption spectroscopy. This laser based technology is able to measure gases from percentage to ppb concentration ranges, with an unforeseen quality of measurement in terms of accuracy and resolution. The LaserCEM® samples the gas at low pressure. This dilution reduces the particles content and the dew point in the sampling line. With LaserCEM® filters replacement is drastically reduced and heating of 180°C is avoided.

Finally, LaserCEM® has an integrated auto calibration of the measurement system, preventing from drift under normal use of the instrument. Therefore LaserCEM® is able to analyze all kind of gases and concentration ranges, with limited services and maintenance costs.

## LaserCEM® KEY FEATURES

- Highly sensitive - Low detection level (ppb)
- Highly selective
- Traced line - 40°C
- Complete pre-calibrated laser infra-red spectrometer
- No Zero drift and no Span drift - No daily calibration required
- No nitrogen, zero air, purge or other carrier gas
- Ppb to % measurement
- Multigas analyser (NO, SO<sub>2</sub>, CO, HCl, CO<sub>2</sub>, NH<sub>3</sub>, H<sub>2</sub>O, O<sub>2</sub>, CO<sub>2</sub>, NO<sub>2</sub>, HF)





is a complete pre-calibrated multi-component (NO, SO<sub>2</sub>, CO, HCl, CO<sub>2</sub>, NH<sub>3</sub>, H<sub>2</sub>O, O<sub>2</sub>, C<sub>2</sub>H<sub>2</sub>, NO<sub>2</sub>, HF) laser infrared spectrometer for CEM's analysis.

ANALYTICAL SPECIFICATIONS		
GAS	RANGE <sup>A</sup>	LOD <sup>B</sup>
NO	0-80 mg/m <sup>3</sup>	0.1
SO <sub>2</sub>	0-75 mg/m <sup>3</sup>	0.5
CO	0-75 mg/m <sup>3</sup>	0.2
HCl	0-15 mg/m <sup>3</sup>	0.01
NH <sub>3</sub>	0-15 mg/m <sup>3</sup>	0.05
H <sub>2</sub> O	0-60% Vol	0.1%
O <sub>2</sub>	0-25% Vol	0.05%
CO <sub>2</sub>	0-20% Vol	0.5%
NO <sub>2</sub>	0-50 mg/m <sup>3</sup>	0.2
HF	0-10 mg/m <sup>3</sup>	0.01

<sup>A</sup> adjustable range on request

<sup>B</sup> limit of detection 3 Sigma



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