



A REVOLUTION
IN THE ONE-LINE GAS ANALYSIS

LaserCEM

No sample pre-treatment
No Heated Lines*
Multi-Components
Pre-Calibrated
No interference
No Drift

Compliant to standard
EN 15267-3 : 2008 and
QAL 1 de EN 14181



AWARD 2010

LaserCEM gas analyzers

Low Pressure Sampling
Extremely High Resolution Laser

Emission monitoring :

- Waste incinerators plants
- Refineries
- Cement plants



- △ The **LaserCEM** is a complete pre-calibrated multi-component (NO, SO₂, CO, HCl, CO₂, H₂O, H₂S, NH₃, N₂O, COS, SO₃, CH₄, HF) laser infrared spectrometer for CEM's analysis.
- △ The **LaserCEM** uses the patented OFCEAS (WO 03031949) IR laser technology for enhanced specificity, selectivity, accuracy and stability (no instrumental response drift).
- △ The **LaserCEM** uses a patented low-pressure sampling system (WO 2010058107) enabling low-cost installation thanks to non-heated lines* and reduced maintenance.
- △ The **LaserCEM** is a reliable, robust, low-cost and easy-to-use solution for CEM's analysis.

LaserCEM Advantages & Benefits

△ DIRECT MEASUREMENT

No sample pre-treatment.

OFCEAS technology associated with low pressure sampling enables direct measurement. The low pressure in the sampling system removes any risk for chemicals adsorption/desorption and condensation in the line.

△ NO INTERFERENCE

OFCEAS technology associated with low pressure sampling provides exceptional selectivity, enabling simultaneous multi-component measurement without interferences, regardless of the matrix.

△ NO RE-ZERO; NO DRIFT

The zero information is contained in the signal, enabling automated and intrinsic re-zero of the analyzer.

△ EASE-OF-USE

The LaserCEM is pre-calibrated for your CEM's application. Initially packaged in a standard 19" rack, it includes a touch screen interface and on-board PC for local / remote control and real time display / recording of results.

△ EASE-OF-INTEGRATION

The LaserCEM allows digital (Ethernet, RS485, RS232, ModBus), analog and TDR I/O's.

△ ROBUSTNESS

The LaserCEM contains no optical moving parts and was designed and built strictly for industrial and on-board mobile applications.

△ LOW MAINTENANCE

High MTBF.

In addition to containing no moving optical components, the IR sources (telecom type laser) are characterized by MTBF's of 5 years.

△ CLEAN LINES / FILTERS

The low pressure sampling system enables low flow rates (3-9 L/h) without degrading response time. Accumulation of contaminants lines and filters is greatly reduced.

△ SAFE

ATEX compliant configuration available.

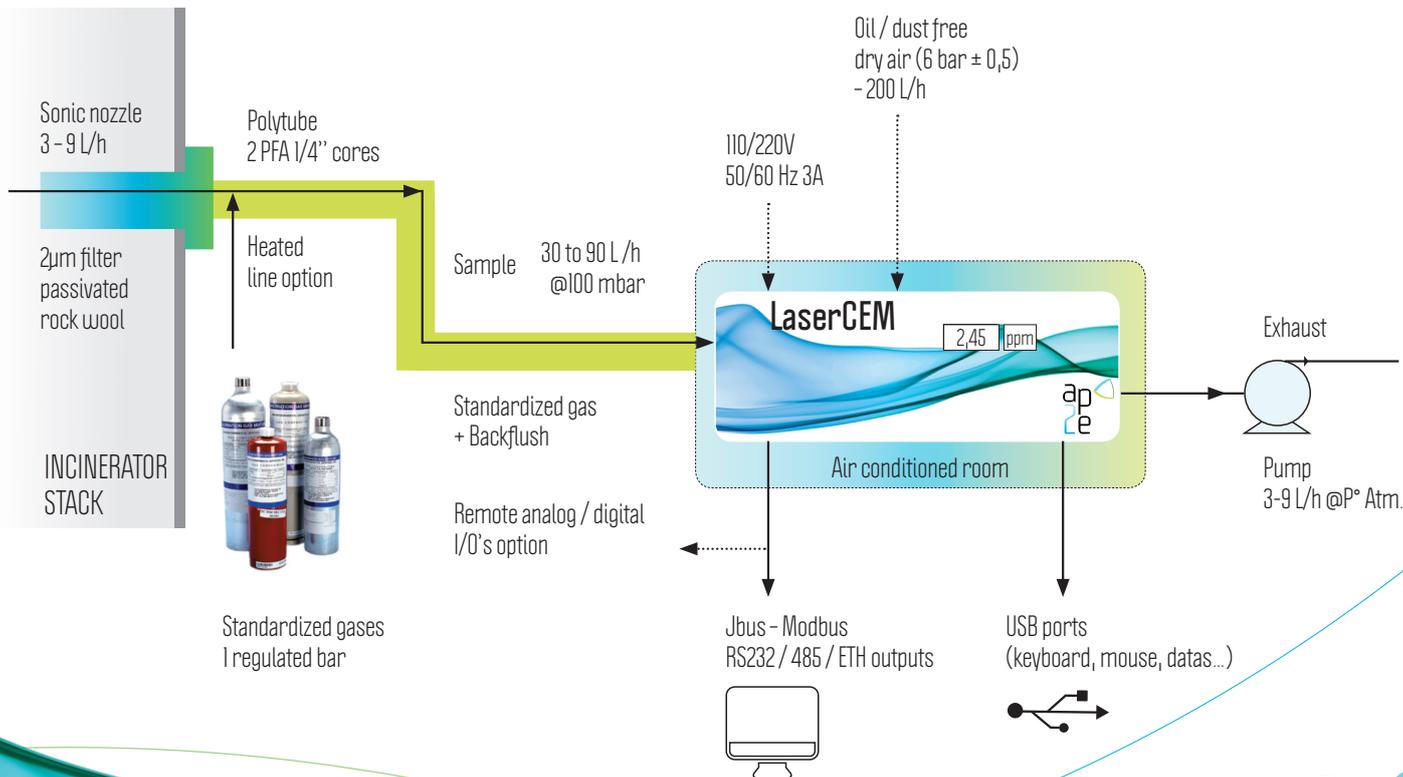
* Requires ambient temperature > 10°C and H₂O < 40 % vol

SAMPLING	
Flow Rate :	3-9 L/h
Max. Temp. :	600°C
Max. Humidity :	H ₂ O(g) < 40% vol. - Standard H ₂ O(g) > 40% vol. - Study Required
Pressure :	1 atm. ± 100 mbar @ sampling point
Sampling Line :	Ambient Temp. > 10°C et H ₂ O < 40% vol. > Simple polytube (no heating) Ambient Temp. < 10°C et H ₂ O > 40% vol. > 40°C heated line
DIMENSIONS	
Size :	standard 19", 4U rack. 550 mm depth.
Weight :	20kg
Options :	Wall mounted ATEX compliant integration
ELECTRONICS	
Display/Control :	5.7" diagonal color touch screen
PC OS :	Windows® XP®
Software :	WinProceas ©
INSTALLATION REQUIREMENTS	
Operating Temp. :	15-35°C - Standard 10-40°C - Optional
Power supply :	200 W - 110-220VAC - 50-60Hz
Compressed Air :	1-6 bar (oil free). Not provided.

I / O's		
Standard :	Ethernet Protocol; RS 485 RS 232; ModBus.	
Optional :	Analog I/O; TDR I/O. Other I/O's on request	
ANALYTICAL SPÉCIFICATIONS		
Gas	Range ^a	LOD ^b
SO ₂	0 to 25 ppm / 0 - 75 mg/m ³	0.22 ppm
NO	0 to 60 ppm / 0 - 80 mg/m ³	0.09 ppm
HCL	0 to 10 ppm / 0 - 15 mg/m ³	0.01 ppm
NH ₃	0 to 10 ppm / 0 - 15 mg/m ³	0.01 ppm
CO	0 to 60 ppm / 0 - 75 mg/m ³	0.22 ppm
H ₂ O	0 - 40% Vol	0.1%
O ₂	0 - 25% Vol	0.05%
CO ₂	0 - 20% Vol	0.06%
SO ₃	0 to 25 ppm / 0 - 80 mg/m ³	0.20 ppm
N ₂ O	0-100 ppm / 0 - 200 mg/m ³	0.09 ppm
CH ₄	0-100 ppm / 0 - 75 mg/m ³	0.11 ppm
NO ₂	0-25 ppm / 0 - 50 mg/m ³	0.08 ppm
HF	0-10 ppm / 0 - 10 mg/m ³	0.01 ppm
Response Time	< 200 seconds.	
Zero Drift :	none	

^a adjustable range on request
^b limit of detection 3 Sigma

LAYOUT FROM SONIC NOZZLE TO LASERCEM ANALYZER



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