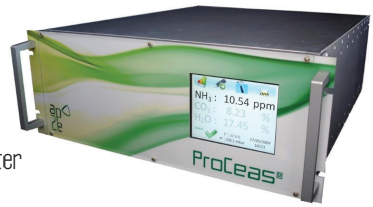
AWARD 2010

ProCeas®

H_2S LNG analyzer

On-line monitoring

Low level H_2S in detection in Liquified Natural Gas**



ProCeas® H_2S is a complete pre-calibrated laser infrared spectrometer for low level detection of H_2S in natural gas and liquefied natural gas (LNG).

ProCeas® H_2S uses the patented OFCEAS (WO 03031949) IR Laser technology for enhanced specificity, selectivity, accuracy and stability (no instrumental response drift.)

ProCeas® H_2S uses a patented low-pressure sampling system (WO 2010058107) enabling low-cost installation thank to non-heated lines* and reduced maintenance.

ProCeas® H_2S is a complete, reliable, robust, low-cost and easy-to-use solution for the H2S analysis natural gas processes.

ProCeas®

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 ProCeas® is pre-calibrated for your 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 ProCeas® allows digital (Ethernet, RS485, RS232, ModBus), analog and TDR I/O's.

ROBUSTNESS
The ProCeas® 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.

ProCeas®

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

**	C_1 :	100%
	C_2 :	20%
	C_3 :	15%
	C_4 :	5%
	C_{5+} :	2%
	CO_2 :	20%
	H_2O :	2%

WF licensed technology

* Requires ambient temperature > 10°C and H_2O < 65 % vol

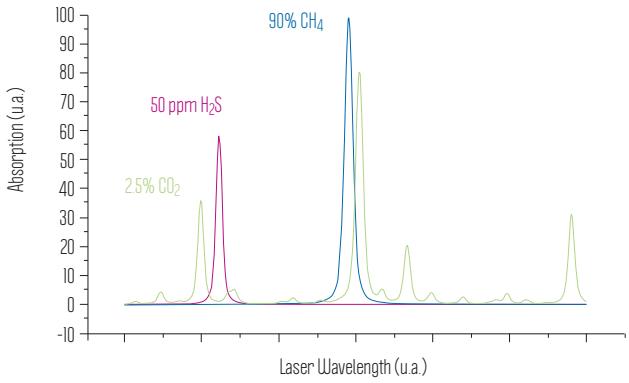
SAMPLING	
Flow Rate:	3-9 L/h
Max. Temp.:	600°C
Max. Humidity:	$H_2O(g)$ < 65% vol. - Standard $H_2O(g)$ > 65% vol. - Study Required
Pressure:	1 atm. ± 100 mbar @ sampling point
Sampling Line:	Ambient Temp. > 10°C et H_2O <65% vol. > Simple polytube (no heating) Ambient Temp. < 10°C et H_2O >65% vol. > 80°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

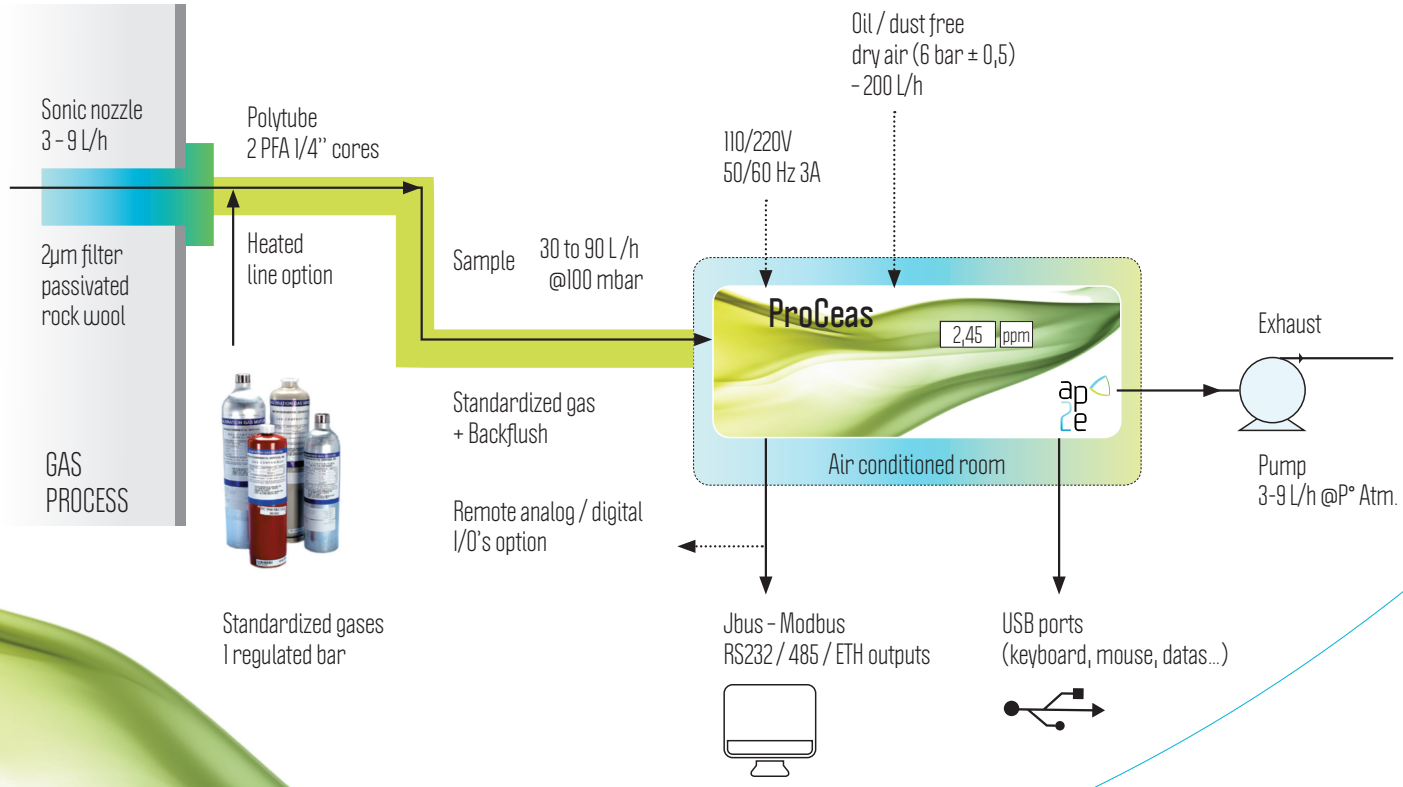
ANALYTICAL SPÉCIFICATIONS				
Gas	Range[a]		LOD[b]	
	min	max	min	max
H_2S	50ppm	10%	2ppb	100ppm
Optional CH_4, CO_2, C_2H_6				
Response Time[c]	<10 seconds.			
Zero Drift:	none			

[a] adjustable range on request
[b] limit of detection 3 Sigma

SPECTRA (Examples) - 200 equidistant data points over 0,2 nm



LAYOUT FROM SONIC NOZZLE TO ProCeas ANALYZER



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