CEMGAS Laser 5000 Analyzer

Direct SO_3 Laser Measurement

Low Pressure Sampling - Extremely High Resolution Laser

SO3 analysis without ... interference:

... spectral overlap
... sample p-retreatment
... moisture removal

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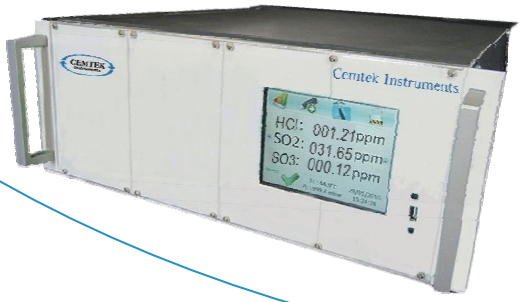


The **CEMGAS Laser 5000 Analyzer System** is a complete pre-calibrated scanning laser infrared spectrometer for SO_3 analysis without interference from any gases or moisture.

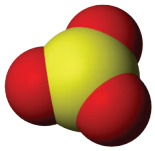
The **CEMGAS Laser 5000 Analyzer** utilizes the patented OFCEAS IR Laser technology for enhanced specificity, selectivity, accuracy and stability (no instrumental response drift)

The **CEMGAS Laser 5000 System** utilizes patented low-pressure/ low-flow sampling technology, negating the need for costly sample conditioning and moisture removal (up to 50%), providing a low cost installation with minimal maintenance.

CEMGAS Laser 5000 Analyzer

Advantages & Benefits

- Interference Free Gas Measurement
- Direct Measurement
  - Sample Conditioning
  - No Moisture Removal
  - Low Temperature Sampling
- Low Maintenance
- Pre-Calibrated
  - Prime Measurement
  - No Re-Zero
- Clean Sample Technology
  - Low– Pressure
  - Low-Flow



NO INTERFERENCE.
CEMGAS Laser 5000 technology associated with low pressure sampling provides exceptional selectivity, enabling simultaneous multi-component measurement without interference, regardless of the matrix.

DIRECT MEASUREMENT. No sample pre-treatment.
CEMGAS Laser 5000 technology associated with low pressure sampling enables direct measurement. The low pressure in the sampling system removes any risk for chemicals absorption/ desorption and/ or condensation in the line.

PRIME MEASUREMENT.
No Re-zero; No Drift
CEMGAS Laser 5000 technology is a prime measurement. The zero information is contained in the signal, enabling automated and intrinsic re-zero of the analyzer.

EASE-OF-USE
The CEMGAS is pre-calibrated for the CEM's application. Initially packaged in a standard 19" rack, it includes a touch screen interface and on-board PC for local control and real-time display of results.

ROBUSTNESS.
The CEMGAS Laser 5000 Analyzer 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 laser) are characterized by MTBF's of 5-10 years.

CLEAN SAMPLE TECHNOLOGY.
The low pressure sampling system enables low flow rates (3-9L/h -0.11-0.33 cfh) without degrading response time.
Accumulation of contaminants in lines and filters are greatly reduced.

EASE-OF-INTERGRATION
Packaged in a standard 19" rack mount with local control and display capabilities, the CEMGAS Laser Analyzer allows digital (Ethernet, RS485, RS232, ModBus) and analog communications with remote diagnostic access

SAFE
ATEX compliant configuration available.

SAMPLING

Flow Rate:	3-9 L/h (0.11-0.33 cfm)
Max. Temp:	600°C (1,110 F)
Max. Humidity:	H^2O (g) < 25% vol.—Standard H^2O (g) > 25% vol.—Study Required
Pressure:	1atm. ± 100 mBar @ sampling point
Sampling Line:	Ambient Temp. > 10°C and H^2O < 20% vol. →simple polytube (no heating) Ambient Temp. < 10°C or H^2O > 20% col. →40°C heated line.

DIMENSIONS

Size:	Standard 19" 4U rack. 550 mm (21.9 in.) depth.
Weight:	20 kg (44lbs)
Options:	Wall mounted. ATEX compliant integration.

ELECTRONICS

Display/Control:	5.7" diagonal color touch screen
PC OS:	Windows® XP®
Software:	WinProceas ©

INSTALLLATION REQUIREMENTS

Operating Temp:	15-25°C (59-77F) - Standard 10-40°C (50-104F) - Optional
Power Requirements:	200W—100-220VAC—50-60Hz
Compressed Air:	1-6 bar (oil free). Not provided.

DATA I/O

Standard:	Ethernet protocol; RS 485, RS 232; ModBus.
Optional:	Analog I/O; TDR I/O. Other I/O's on request.

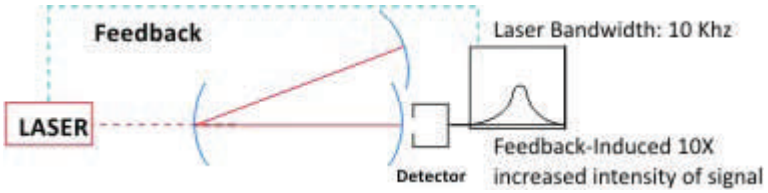
ANALYTICAL SPECIFICATIONS

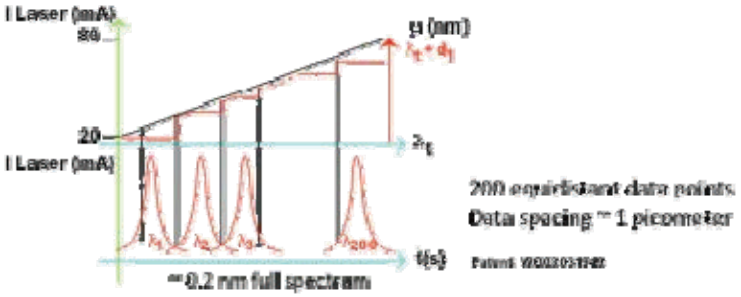
STANDARD	Calibration Ranges
SO3	0-10ppm 0-1,000 ppm
OPTIONAL	
NO	0-60 ppm 0-5,000 ppm
SO2	0-25 ppm 0-5,000 ppm
CO	0-60 ppm 0-800 ppm
HCI	0-10 ppm 0-200 ppm
CO2	0-20% vol.
H2O	0-20% vol.
H2S	0-10 ppm 0-1,000 ppm
NH3	0-10 ppm 0-1,000 ppm
N2O	0-10 ppm 0-1,000 ppm
COS	0-10 ppm 0-1,000 ppm

LoD:	< 1% of max. in range
Response Time:	< 200 seconds (with sample transfer time)
Zero Drift:	none.

PRINCIPLE OF OPERATIONS

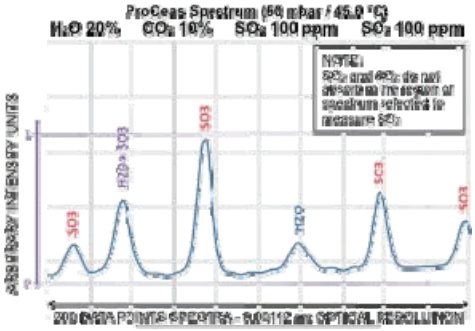
Optical Feedback Cavity Enhanced Absorption Spectroscopy

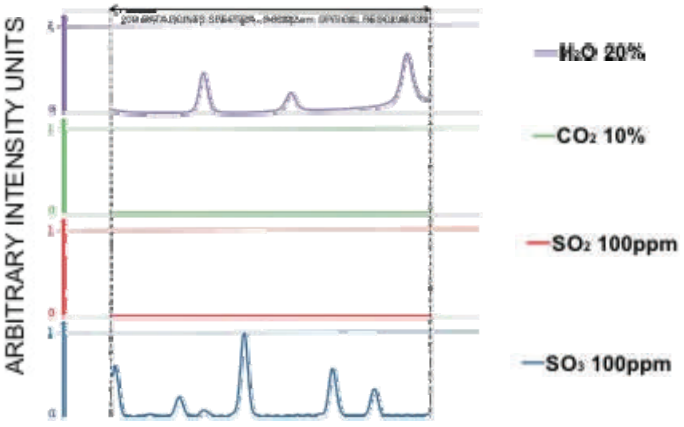




SPECTRA (Examples)

200 equidistant data points over 0.2nm





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