

## Low level sulphur analyser CG300 | CG 310



- Analysing sulphur components at ppb level
- FPD or PFPD
- Can be combined with other analysers (RGA, PGA, etc.)
- ASTM D6228, D5504, ISO 19739

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## Low level sulphur analyser

The GAS Low-Level Sulphur Analyser provides precise measurement of volatile sulphur species in several gas and liquid matrices. It can operate independently as a standalone analyser or be combined with other analysers as an extra analysis channel.

### Principle of operation

The low level sulphur analyser for petrochemical applications comprises a gas sampling valve (GSV), a SSL (split-splitless injector), a suitable separation column, and a sulphur-selective detector, either an FPD (Flame Photometric Detector) or a PFPD (Pulsed-FPD); see figure 1. As sulphur species readily adsorb onto active surfaces, Sulfinert (SilcoNert 2000) deactivation is applied to the entire sample path, a measure that is critical for reliable and accurate quantification.

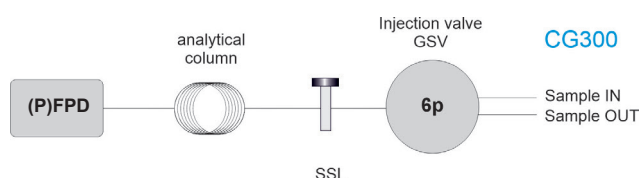


Figure 1 Diagram low level sulphur analyser

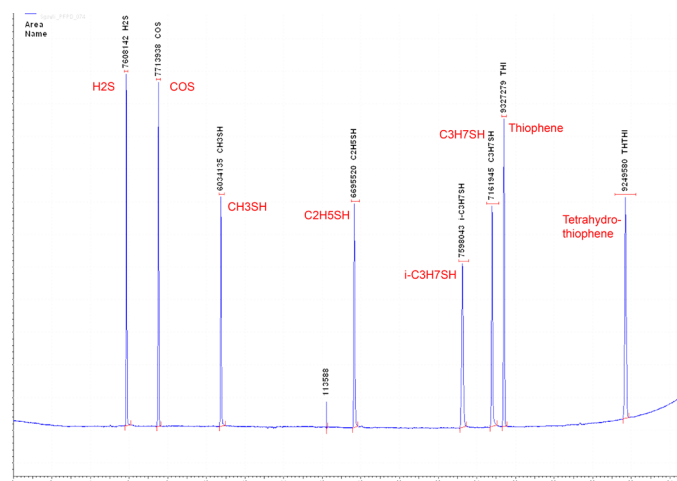


Figure 2 Chromatogram calibration standard. Concentration level: 5 ppm per component. Detector: PFPD. Column: Select Low Sulphur

### FPD / PFPD

PFPD and FPD both offer excellent long-term stability. PFPD offers best sensitivity (20-30ppb; see figure 6) while FPD provides a cost-effective solution when detection limits of 100-200 ppb are sufficient.

### Choice of separation column

The choice of the optimal separation column depends on the components being analysed and the sample matrix. Available column phases include non-polar, sulphur-selective, and porous polymer.

GC-PFPD ID	H2S Area	COS Area	CH3SH Area	C2H5SH Area	i-C3H7SH Area	C3H7SH Area	THI Area	THTHI Area
PFPD_071	7653680	7716514	6026713	6764998	7612207	7096988	9317300	9226699
PFPD_072	7575351	7695225	5928568	6794046	7631111	7204149	9296086	9213385
PFPD_073	7648397	7698897	6013745	6725392	7641811	7193838	9352864	9246370
PFPD_074	7608142	7713938	6034135	6695520	7598043	7161945	9327279	9249580
Min:	7575351	7695225	5928568	6695520	7598043	7096988	9296086	9213385
Max:	7653680	7716514	6034135	6794046	7641811	7204149	9352864	9249580
Mean:	7621393	7708144	6000790	6744989	7620793	7164230	9323382	9234509
Std Dev:	36820	10646	48880	43352	19488	45294	23569	16811
%RSD:	0.48	0.14	0.81	0.64	0.26	0.67	0.25	0.18

Figure 3 Statistical data of the shown chromatogram

### Specification

- Thermo Trace GC1600 with SSL (liquid injector), GSV, capillary column, FPD or PFPD detection
- Runtime 34 minutes
- Minimum detectability FPD: 100-200 ppb; PFPD: 20-30 ppb
- Repeatability < 1 %

Ordering information CG30X - ABCDE Low level sulphur analyser using PFPD  
CG31X - ABCDE Low level sulphur analyser using FPD

code X	0	1	2	3
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For the selection of options ABCDE (e.g. valve type and passivation, pump and vacuum sampling, rotameter and sample connections, pressure and moisture sensors, hydrogen sensor for safety shut-off, power plug type and more), see the options table in the order guide.

### About GAS

Global Analyser Solutions provides GC & GC-MS solutions for Energy, Refinery, Chemical and Environmental markets. Our analysers address a broad spectrum of measuring requirements with high precision and reliability. Please reach out for more information on our website. [www.gassite.com](http://www.gassite.com)