

Application Data Sheet

No. 125

System Gas Chromatograph

BID Ultra-Fast Natural Gas Analyzer Nexis GC-2030 BIDUFNGA

This method is for determining the chemical composition of natural gases and similar gaseous mixtures within the composition range shown below. This GC system provides data for calculating physical properties of the sample, such as heating value and relative density, or for monitoring the concentrations of one or more of the components in a mixture. A total of 3 valves and 6 columns are used in this GC system. Sample is loaded into three sample loops for determination. Using a pre-column, C6+ components are back-flushed as a single peak. The valve timing then allows the hydrocarbons C1 through to C5 to be separated by an alumina capillary column and detected by FID. Finally, using a MS-5A, H₂, O₂, N₂, CH₄, CO are separated meanwhile CO₂, C₂H₄, C₂H₆, C₂H₂, H₂S are separated by Rtx-Q plot column and detected by BID. The final analysis time is approximately 5 minutes. The system includes LabSolutions GC workstation software and BTU and Specific Gravity calculation software.

Analyzer Information

System Configuration:

Five valves / three packed columns and three capillary columns with one BID detector and one FID detector

Sample Information:

Permanent gas, C₁-C₆, H₂S

Concentration Range:

No.	Name of Compound	Concentration Range		Detector
		Low Conc.	High Conc.	
1	H ₂	0.01%	10.0%	BID
2	O ₂	0.01%	10.0%	BID
3	N ₂	0.01%	10.0%	BID
4	CO	0.01%	10.0%	BID
5	CO ₂	0.01%	10.0%	BID
6	C ₂ H ₄	0.01%	10.0%	BID
7	C ₂ H ₆	0.01%	10.0%	BID
8	C ₂ H ₂	0.01%	10.0%	BID
9	H ₂ S	0.01%	10.0%	BID
10	CH ₄	0.01%	80.0%	FID
11	C ₃ H ₈	0.001%	10.0%	FID
12	i-C ₄ H ₁₀	0.001%	10.0%	FID
13	n-C ₄ H ₁₀	0.001%	10.0%	FID
14	i-C ₅ H ₁₂	0.001%	2.0%	FID
15	n-C ₅ H ₁₂	0.001%	2.0%	FID
16	C ₆ +	0.001%	0.5%	FID

Concentration range may vary depending on the sample. Please contact us for more consultation.

System Features

- Versatile software easy GC system operation
- Two channels with FID / BID detectors realize high-speed analysis
- Linear response, simplifies calibration

Typical Chromatograms

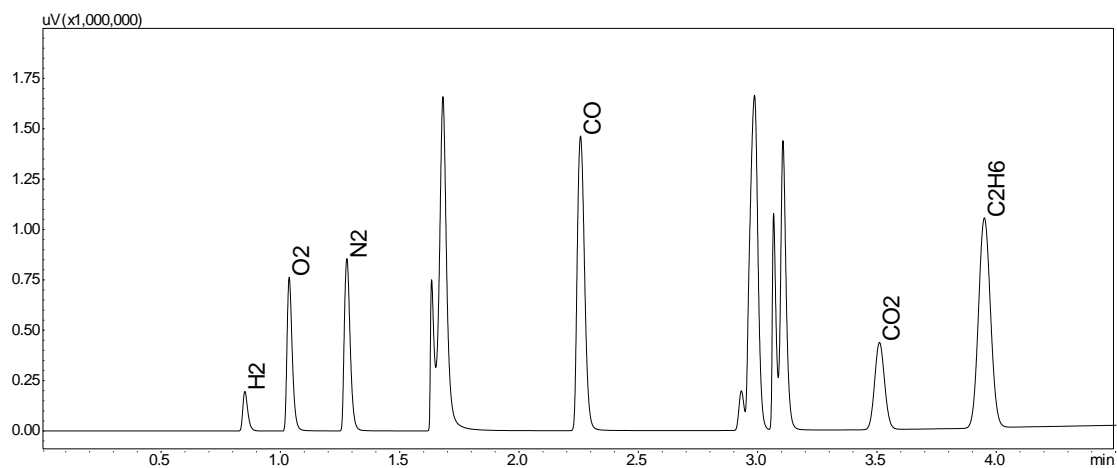


Fig. 1 Chromatogram of BID

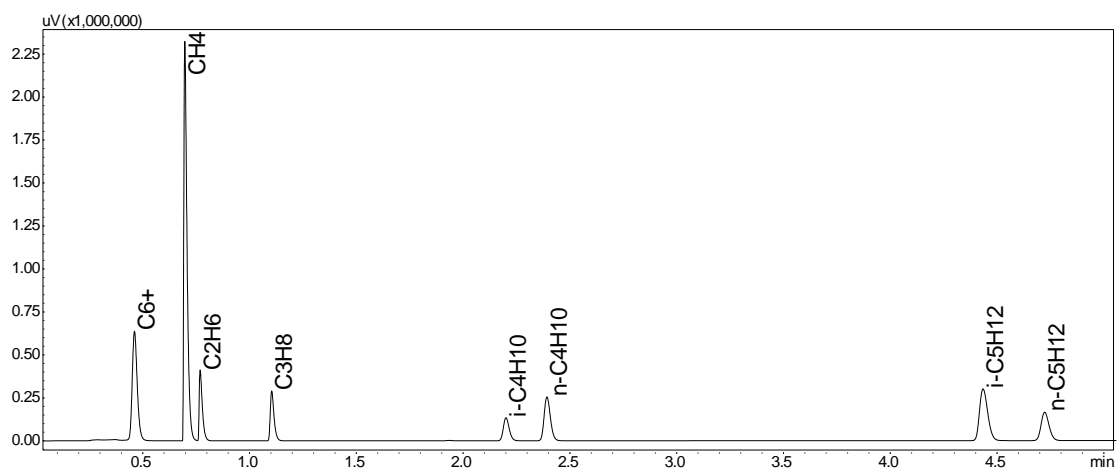


Fig. 2 Chromatogram of FID