JAS NGA

Natural Gas Analyzer

jas Analyzer

THE STABLE ELEMENT IN YOUR LAB

25 jas YEARS

JAS NGA

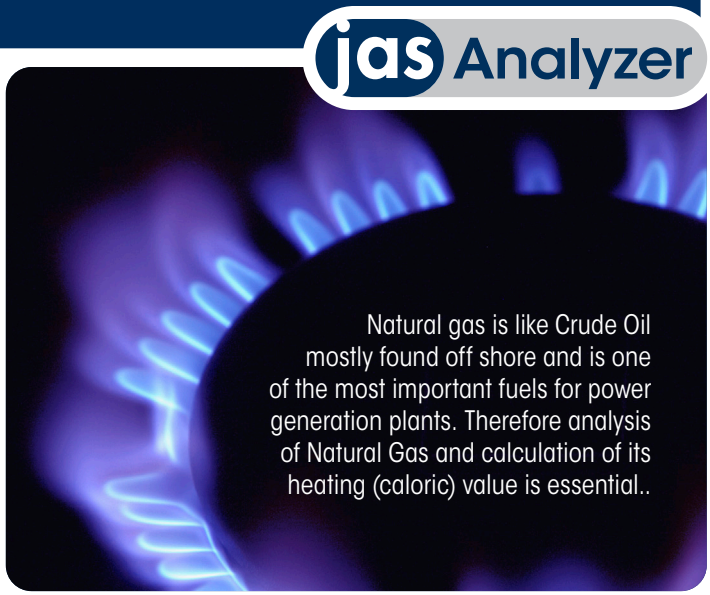
Natural Gas Analyzer

JAS NGA – a prime turnkey system for determination of natural gas composition and for calculation of BTU and gas properties.

JAS NGA is based on the **Agilent's 8890 GC** that is configured for analysis of natural gas. With the combination of unique JAS isothermal valve box, valve automation technology, optimized GC column set and JAS Report Generator software, JAS NGA distinguishes itself from competitors as a prime turn-key system for natural gas analysis.

Included in the system, the JAS Report Generator is fully integrated into Agilent OpenLAB™ for BTU and gas property calculations based on ISO 6976.

JAS NGA can be specially configured upon request to the following standard methods to ensure suitability for use in downstream processes.& methods:



Natural gas is like Crude Oil mostly found off shore and is one of the most important fuels for power generation plants. Therefore analysis of Natural Gas and calculation of its heating (caloric) value is essential..

Method	Remarks
ASTM D1945	
ASTM D3588	NGA is your TURNKEY
GPA 2261	Available as 1- & 3-valve system
GPA 2286	Custom made upon request
GPA 2186	Custom made upon request
ISO 6974	Custom made upon request

NGA is your TURNKEY SOLUTION for natural gas analysis

- Turnkey solution — guaranteed application as custom-made solution to analyze one of followings: Natural Gas, Liquefied Petroleum Gas or Natural Gas Liquids (NGL)
- Automatic calculation of gas properties (e.g. BTU, specific gravity) and report generation at the end of an analysis (fully integrated into the Agilent OpenLAB)
- Operational procedures are fully documented – the analyzer not only incorporates proven GC hardware and software, but arrives also with the pre-loaded analysis method(s), documentation and a calculation model specific to the application
- Flexibility to analyze natural gas, liquefied petroleum gas or natural gas liquids (NGL)
- Rugged and easy to maintain
- Configuration alternatively possible with Agilent 8860 GC
- Configuration according to GPA 2261 and ASTM D 1945 possible; GPA 2186, GPA 2286, ISO 6974 upon request

FIELD of APPLICATIONS

- Natural gas plants
- Pipeline monitoring stations
- Gas-fired power plants
- Gas Companies

JAS NGA

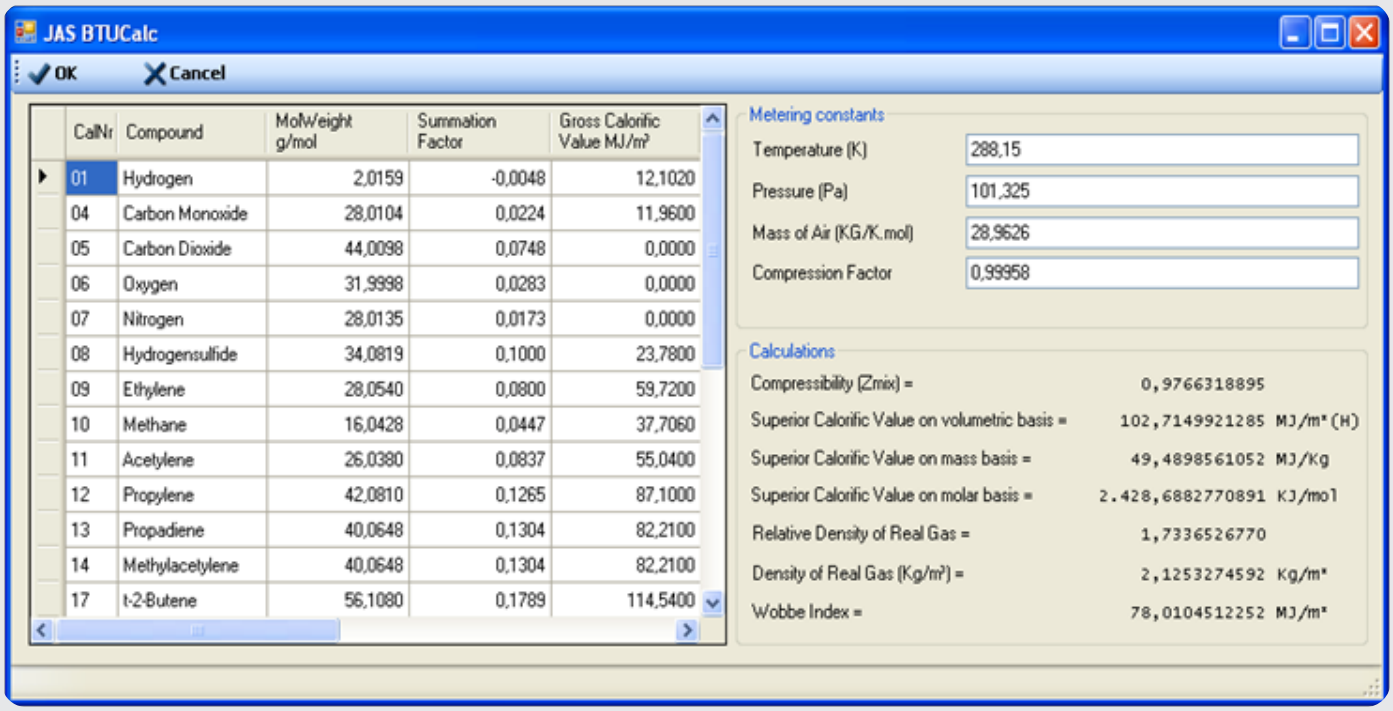
Natural Gas Analyzer

JAS REPORT GENERATOR, A DEDICATED AND UNIQUE SOFTWARE

This Software has the capability to automatically calculate physical properties such as BTU and specific gravity selected by the user after each analysis. The S/W uses the result table generated in OpenLAB™ to calculate needed properties according to ISO 6976. A standard database for gases with flexibility for users to modify for special needed is included in the software. Additional conditions such as temperature and pressure can be edited as well.

SOFTWARE FEATURES

- Expandable Compound Table
- Calculations according to ISO 6976
- Flexible Report Generation, allows customization



JAS NGA

Natural Gas Analyzer

INSTRUMENT CONFIGURATION according to GPA 2261

Hardware: Agilent GC 8890, TCD, FID, Valves, PC Bundle, Capillary and Packed Columns, Unis-S/SL, OpenLAB

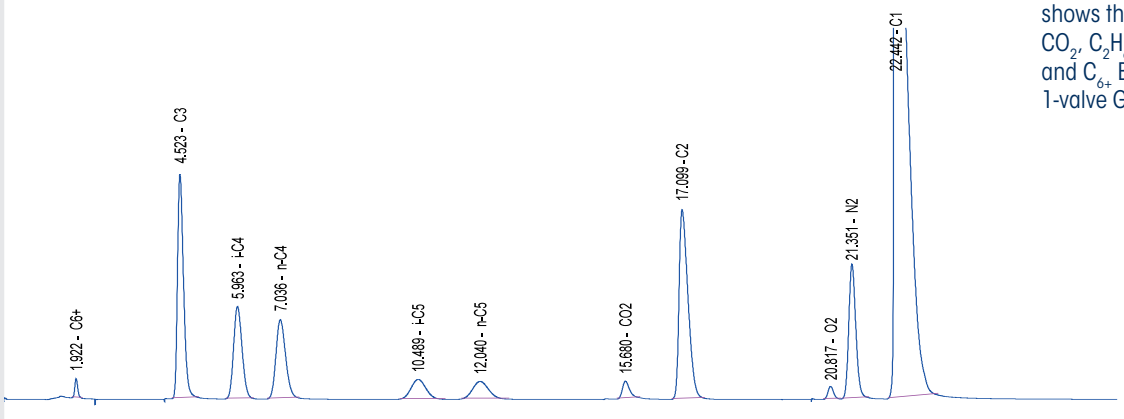
Software: Special Calculation & Reporting Software functions, fully integrated into Agilent's OpenLAB

Natural Gas COMPONENTS

The below table shows the natural gas components and their concentration range in %.

NGA-components	Formula	Concentration range in %
Oxygen	O_2	0.01 ~ 20
Nitrogen	N_2	0.01 ~ 100
Carbon Dioxide	CO_2	0.01 ~ 20
Methane	CH_4	0.01 ~ 100
Ethane	C_2H_6	0.01 ~ 15
Hydrogen sulphite	H_2S	3.00 ~ 100
Propane	C_3H8	0.01 ~ 100
iso-Butane	C_4H_{10}	0.01 ~ 10
n-Butane	C_4H_{10}	0.01 ~ 10
iso-Pentane	C_5H_{12}	0.01 ~ 2
n-Pentane	C_5H_{12}	0.01 ~ 2
Hexane and heavier components	C_6H_{14}	0.01 ~ 2

Chromatogram



The following chromatogram shows the components C_3-C_5, CO_2, C_2H_6 as well as O_2 N_2, CH_4 and C_{6+} Back-flushed; based on 1-valve GPA 2261 analysis

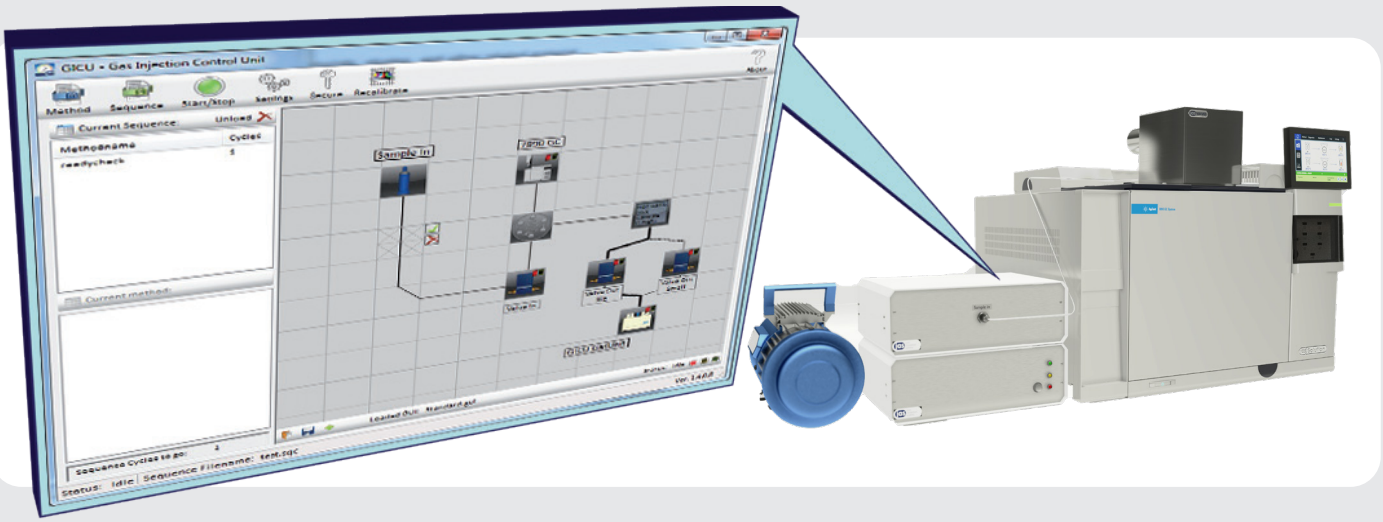
JAS NGA

Natural Gas Analyzer

OPTION GICU – GAS INJECTION CONTROL UNIT

The GICU System is a standalone modular system and fully controlled by dedicated software that is fully integrated in Agilent OpenLAB™. The GICU allows gases to fill the GC sample loop with user specified pressures. By varying the pressure, the sample concentration can be controlled:

- As the pressure in the sample loop can be controlled with the GICU system, a multi-level calibration is possible with only using one standard gas.
- GICU allows sub ambient pressure injection of high concentration samples to avoid detector saturation and ensure samples are analyzed within the dynamic range.
- GICU allows constant pressure in the sampling loop and greatly increases the repeatability of gas sample injection.



GICU BENEFITS:

- Very easy to calibrate and run gas samples under the same or similar conditions.
- GICU can handle different gas samples with different pressures
- Possibility to adjust the sample loop pressure from 50 mbar to 1800 mbar (abs) / 0.725 psi to 26 psi (abs.)
- GICU is using an automated sampling system with a pre-programmed procedure for flushing and cleaning of the gas path of the system: ideal when handling hazardous samples.
- The GICU System is modular and stand alone, fully controlled by dedicated software: GICU starts the GC run after achieving the set pressure or when the GICU method is complete.
- Setup of the program is easy and user-friendly and can be incorporated into specific selected GC methods

About Joint Analytical Systems

Since 1995 JAS has been a Premier Solution Partner and Value Added Reseller of Agilent Technologies. We are an innovative-driven organization that offers customized solutions for GC, GCxGC, µGC, GC-AED, GC-MS, GC-QQQ, LC, LC-MS, LC-QQQ and Q-TOF LC-MS applications.

JAS serves key industries such as

- **Chemical**
- **Petrochemical/HPI**
- **Environmental**
- **Food & Flavor**
- **Forensic**

JAS Products for GC

- Atomic Emission Detector
- UNIS Inlet Systems
- Automatic Gas Samplers
- CryoTrap
- Customized Valving Systems
- EzPrep - Preparative Fraction Collector
- Olfactometer
- GICU - Gas Injection Control Unit

Joint Analytical Systems GmbH

Carl-Zeiss-Straße 49
47445 Moers
Germany

Phone: +49 2841 9871 100
Fax: +49 2841 9871 222
e-Mail: info@jas.de
Internet: www.jas.de