

Fast, accurate, and reliable continuous analysis of your natural gas quality with Quantum Cascade Laser analyzers

Background

Natural gas is principally composed of methane but also includes amounts of higher value hydrocarbons, additional gases, water, and other impurities. The identification and removal of impurities are critical as contaminants can degrade process efficiency, raise cost, encourage corrosion damage, and increase risk. The ample supply of natural gas, and resulting transportation and storage demands, magnify the challenges operators face in the natural gas quality process.

What's your challenge?

Operators must be able to ensure the composition of gas delivered – and received – is of sufficient quality per contractual fiscal agreements, pipeline requirements, and safety considerations.

What's your opportunity?

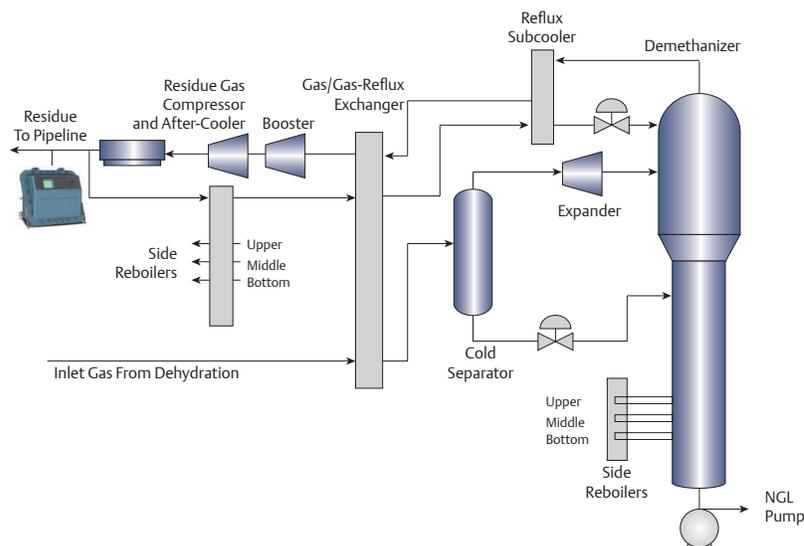
Rosemount QCL/TDL provides rapid, reliable, high accurate measurement to ensure natural gas meets quality standards and specifications, does not contain impurities that react and can corrode pipelines, and avoids any combustion or safety concerns downstream.

QCL Benefits for Natural Gas Quality

Natural gas is required to meet stringent quality controls to satisfy fiscal and contractual obligations and ensure safe transportation. Rosemount Quantum Cascade Lasers offer fast and reliable monitoring of natural gas impurities to ensure quality standards are met and to avoid problems within the process or downstream.

- Rapid, indirect, and interference-free surveillance and detection of H₂O, H₂S, and CO₂ in the natural gas stream
- Unmatched sensitivity and real-time measurement detect a variety of components and impurities, including complex mixtures and changes in methane levels
- Patented laser chirp technique analyses natural gas continuously down to sub ppm concentrations, to provide sub-second measurements
- Outstanding reliability and stability in the most extreme of conditions and operations
- No consumables, no calibration, and no in-field enclosure or shelters reduce cost and simplify maintenance and upgrades
- Easy-to-use instrumentation and fast technician training

Figure 1 – Typical Natural Gas Quality Process



Recommended Technology

Rosemount™ CT5800 Continuous Gas Analyzer

A unique cell design enables the CT5800 to deliver highly accurate measurement of very low concentrations of impurities in gas streams. The device can have up to six Quantum Cascade Lasers to measure multiple components simultaneously in a single analyzer. In addition to ethylene applications, it is also ideal for nitrogen and hydrogen purity applications. The CT5800 is designed for hazardous areas with a flameproof enclosure.



Table 1 – Typical Measurement Ranges

Component	Measurement Range		
	Range	LOD	Repeatability*
H ₂ O	0–2500 ppm	5.0	±1 %
CO ₂	0–20 %	0.04	±1 %
H ₂ S (coming soon)	0–100 ppm	0.5	±1 %

*Repeatability is ±1 % of reading or the Limit of Detection (LOD), whichever is greater.

Features & Benefits

Multi-component QCL analyzer

- Measure up to 12 components simultaneously
- Accurate and sensitive gas measurements
- Excellent linearity of response and repeatability
- Auto validates analyzer performance to insure control performance without field maintenance intervention
- Low maintenance and low lifetime costs
- Continuous health diagnostic reporting
- Embedded ARM processor for fully autonomous operation
- Intuitive, simple front panel user interface allows access to all instrument functions

Field serviceable and field configurable

- Interchangeable modular configuration for up to six lasers

EmersonProcess.com/GasAnalysis

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