

NATURAL GAS LIGHT STREAM FRACTIONATION

CUSTOMER PROCESS BROCHURE

- Servomex offers revolutionary new analysis method for monitoring light hydrocarbons
- Fast, responsive performance compared to traditional analysis techniques
- Immediate process control improvements preserve product purity and increase yield

The processing of natural gas is a complex process which yields a wide range of pure hydrocarbon products alongside the production of pipeline-quality natural gas. Fractionation processes produce a range of key hydrocarbons that are base components for chemical manufacture as well as pipeline natural gas and LPG. The efficient management of this fractionation process is crucial, as a well-managed process improves product quality and increases yield, therefore increasing the volume and value of saleable product.

The fractionation process relies heavily on effective gas analysis throughout the process to accurately determine the concentration of the unfractionated gas stream and separated pure product streams. While this analysis has traditionally been carried out by Gas Chromatograph analyzers, Servomex offers a revolutionary new measurement solution: the new SERVOTOUGH SpectraScan 2400, a real time optical analyzer that delivers a breakthrough capability in the continuous analysis of light hydrocarbons C1-C5+. A less complex and more reliable technology

than GC techniques, the SpectraScan offers a considerably faster real time measurement, enabling plants to respond far more quickly to unusual process conditions – thereby preserving product quality.

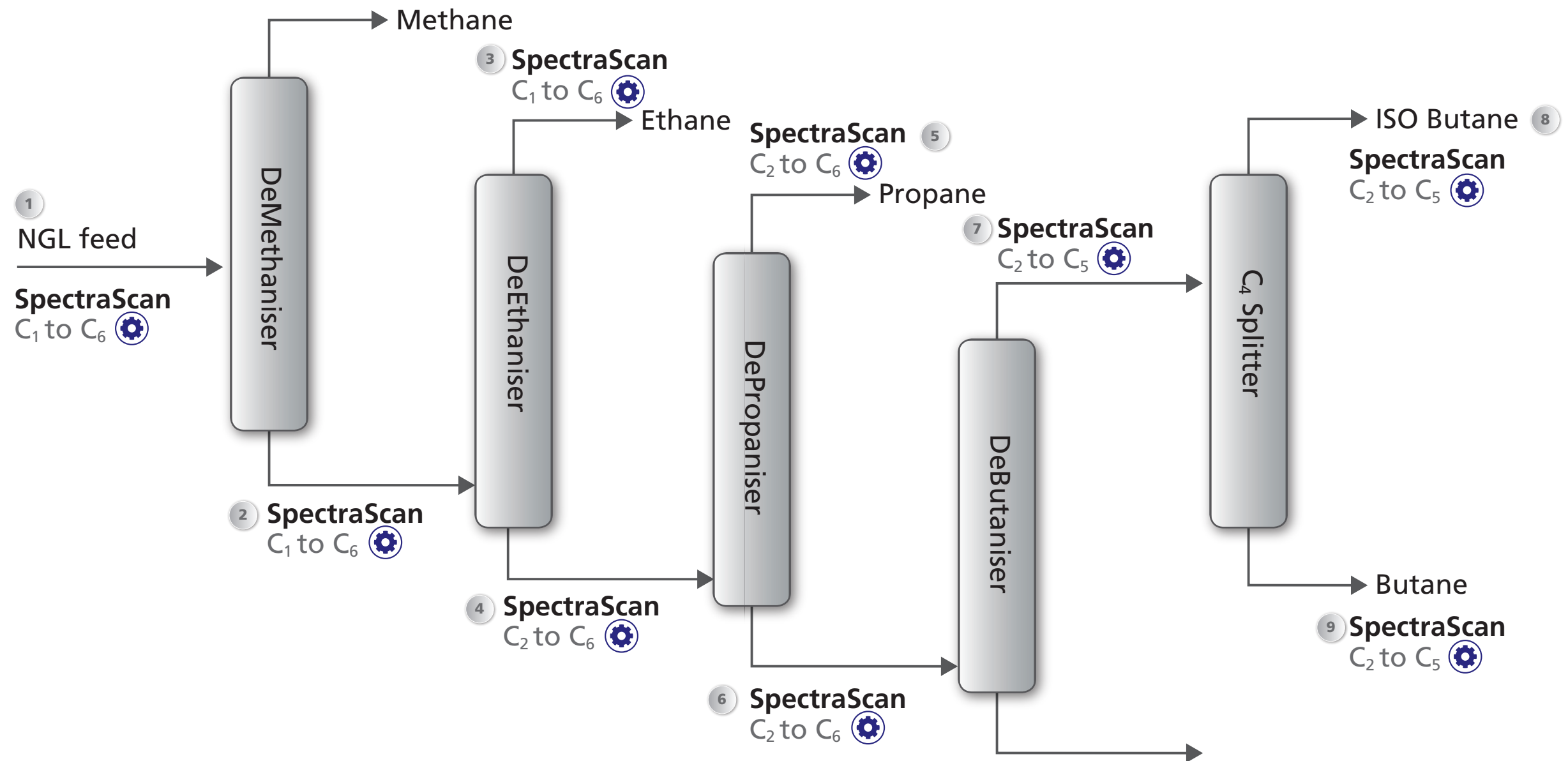
When combined in multiple points of measurement by Servomex Systems, and supported by Servomex's global Service Network, the SpectraScan brings a new level of performance and efficiency to light hydrocarbon mid-stream fractionation analysis for natural gas plants.



NATURAL GAS LIGHT STREAM FRACTIONATION APPLICATION MAP

KEY:
APPLICATION
TYPES:

 PROCESS CONTROL
  QUALITY
  SAFETY
  EMISSIONS
  COMBUSTION



PROCESS DESCRIPTION

A Natural Gas Liquids (NGL) plant separates a mixture of light hydrocarbons into a variety of pure products using a series of fractionators, which each split out different components of the hydrocarbon gas stream. The typical NGL process will separate methane, ethane, propane and butane, although other arrangements are possible depending on specific gas requirements.

The light hydrocarbon feed (1) is monitored by the **SERVOTOUGH SpectraScan 2400** and consists of methane, ethane, propane, iso-butene, n-butane and C₅₊ or gasoline components. It is first fed to the demethanizer for methane removal, and following separation of the methane the remaining product feed (2) is monitored by the **SpectraScan** for quality and process control respectively.

The feed then proceeds to the deethanizer, where again the **SpectraScan** monitors the separated ethane (3) and the remaining gas mixture stream (4). Propane is then removed in the depropanizer, where the **SpectraScan** monitors the separated propane (5) and the remaining gas mixture stream (6).

The remaining product, containing n-butane, iso-butane and heavier components, is fed to the debutanizer where n-butane and iso-butane are removed and monitored by the **SpectraScan** (7) and fed to a C₄ splitter; the residual C₅₊ material is removed as bottoms product. The tops and bottoms from the C₄ splitter are then monitored by the **SpectraScan** (8) (9).

SERVOMEX ANALYSIS SOLUTIONS

SpectraScan 2400

SERVOTOUGH



REAL-TIME LIGHT HYDROCARBON GAS ANALYZER



CP/HP3 Rev. 0.02/19



ANALYZERS



SERVICE



SYSTEMS



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