

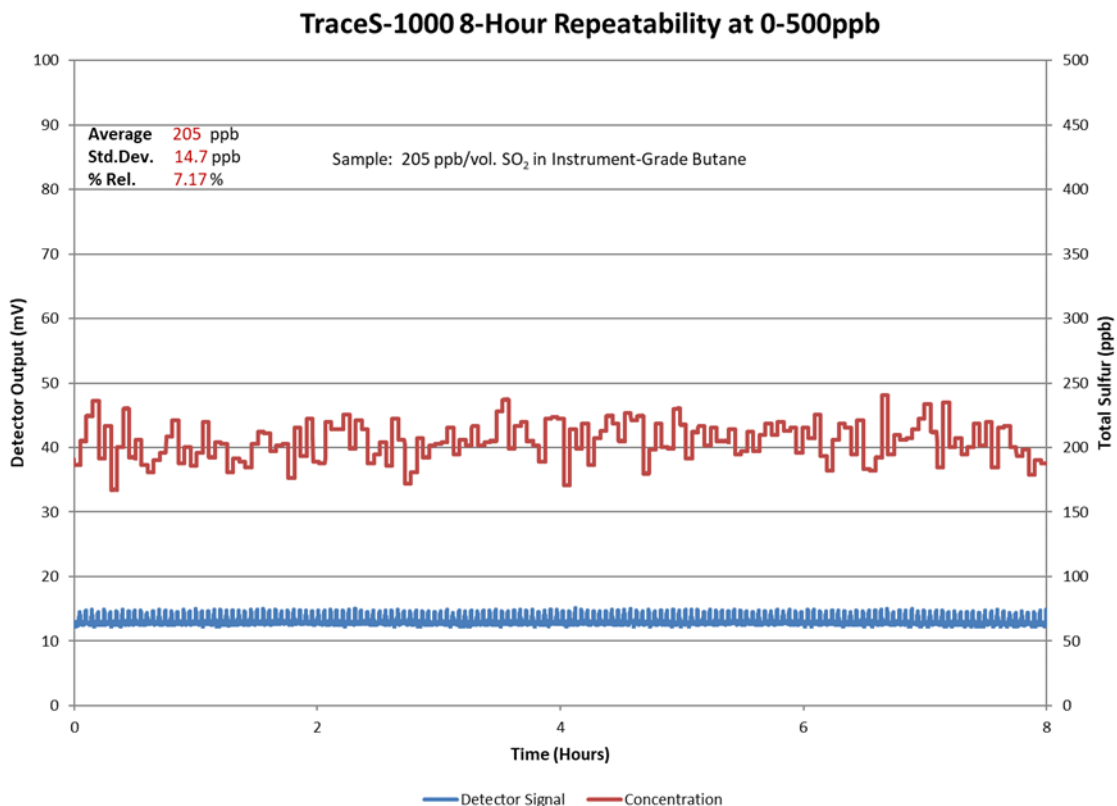
## Trace Sulfur in Butane and other Gas/LNG Applications

Driven by an increasing need for Total Sulfur trace analysis in gas and LNG products, ATOM Instrument developed the TraceS-1000. This remarkable online process analyzer incorporates patented Excimer UV Fluorescence (EUVF) technology and is specifically designed for measurement of Trace Total Sulfur content in applications that require the ultimate in low-level sensitivity, such as polymer-related applications.

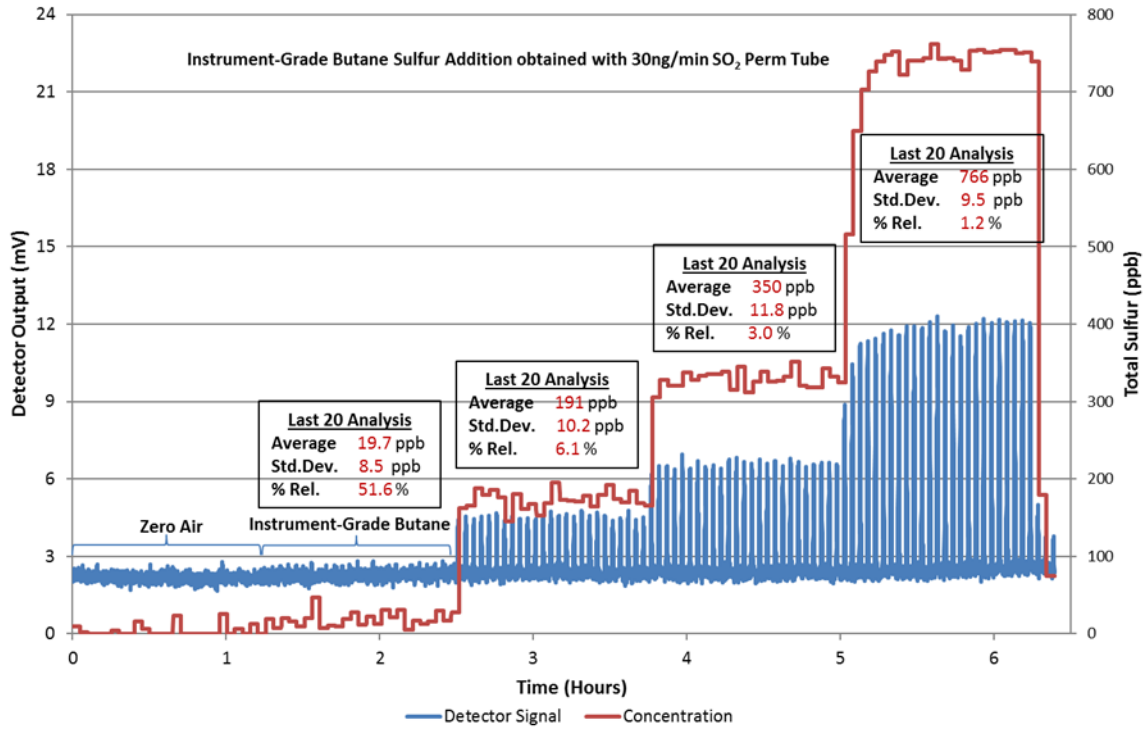
One application where the TraceS-1000 has demonstrated exceptional analytical performance is the measurement of total sulfur in butane at the Ultra Low Range of 0-1000 ppb/vol. Acquired test results reflect excellent linearity, precision and long-term stability for this extremely low range. Analytical results represented were obtained utilizing an oxygen/argon blend for combustion.

The TraceS-1000 provides unparalleled sensitivity and rapid response to concentration changes with a typical analysis time of only 180 seconds. Instrument operation is simplified with intuitive and user-friendly software, with an added feature that allows data averaging for enhanced analytical precision.

Eight-hour repeatability using a sulfur dioxide (SO<sub>2</sub>) permeation tube for sulfur addition to instrument-grade butane demonstrated a SD of 14.7 ppb at 205 ppb/vol. concentration or 7.17% RSD. Using the moving average feature, a 3-run analysis (9-min. response time) further improved repeatability, yielding a SD of 8.5 ppb or 4.16%. Various concentrations run for linearity characterization reflect rapid response, outstanding repeatability and excellent linearity with a 0.9965 correlation.



### TraceS-1000 Response for Concentrations less than 1ppm/vol. in Butane



### TraceS-1000 Linearity for Concentrations less than 1ppm/vol. in Butane

