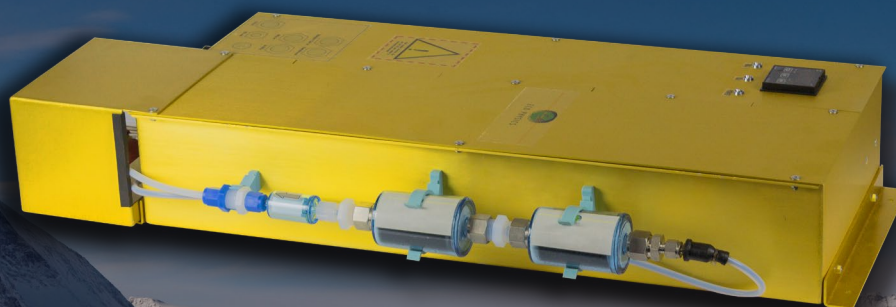




ECO PHYSICS CON 765

APPLICATION EXAMPLES

- Ambient air quality control
- Atmospheric research
- Tropospheric research
- Continuous trace gas analysis



The CON 765 NO_y converter was developed for combination with a highly sensitive ECO PHYSICS chemiluminescence analyzer and allows the measurement of the total reactive nitrogen oxides (NO_y) in the range of parts per trillion.

The Role of Oxides of Nitrogen

The oxides of nitrogen play an important role in atmospheric chemistry. In the troposphere, nitric oxide (NO) and nitrogen dioxide (NO₂) first function as catalysts in photochemical reaction cycles, that either produce or destroy ozone (O₃), second, they are precursors of nitric acid (HNO₃), which is an important constituent of acid precipitation. Compounds such as peroxyacetyl nitrate (PAN) are an important source of NO_x (NO + NO₂) in areas far off from anthropogenic sources. In the lower stratosphere, NO_y and ClONO₂ are the principal reactive nitrogen species involved in ozone depletion. Accurate measurement techniques for the above mentioned compounds are important to be able to understand their chemistry and verify model calculations.

What is NO_y?

$$\begin{aligned}\text{NO}_y &= \text{NO}_2 + \text{NO}_x \\ \text{NO}_x &= \text{NO} + \text{NO}_2 \\ \text{NO}_2 &= \text{HNO}_3 + \text{HONO} + \text{N}_2\text{O}_5 + \\ &\quad \text{HO}_2\text{NO}_2 + \text{PAN} + \text{NO}_3 + \\ &\quad \text{org. nitrates} - \text{but not NH}_3\end{aligned}$$

The Measurement Technique

The CON 765 utilizes the reduction of the higher oxides of NO in reaction with CO on a metal catalyst $\text{NO}_y + \text{CO} > \text{NO} + \text{CO}_2 + \text{X}$ and the subsequent detection of NO by a ECO PHYSICS chemiluminescence NO analyzer.

Continuous Monitoring

The CON 765 NO_y gold converter enables the continuous and automatic monitoring of nitrogen oxides at remote clean air areas. Many features have been integrated to assure robust, accurate and safe operation. The conversion efficiency exceeds 90% and is linear over the complete range. The presence of water vapor in the sample reduces the interference of NH₃ and HCN to a negligible level.

The Ideal Combination

The CON 765 is designed to be operated together with an ECO PHYSICS NO analyzer. The CON 765 is in use at several remote research and monitoring locations in Europe.

- Compact design
- High conversion efficiency
- Low interferences against HCN, NH₃ and amines
- Remotely controllable in combination with a ECO PHYSICS nCLD

SPECIFICATIONS

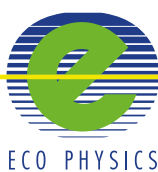
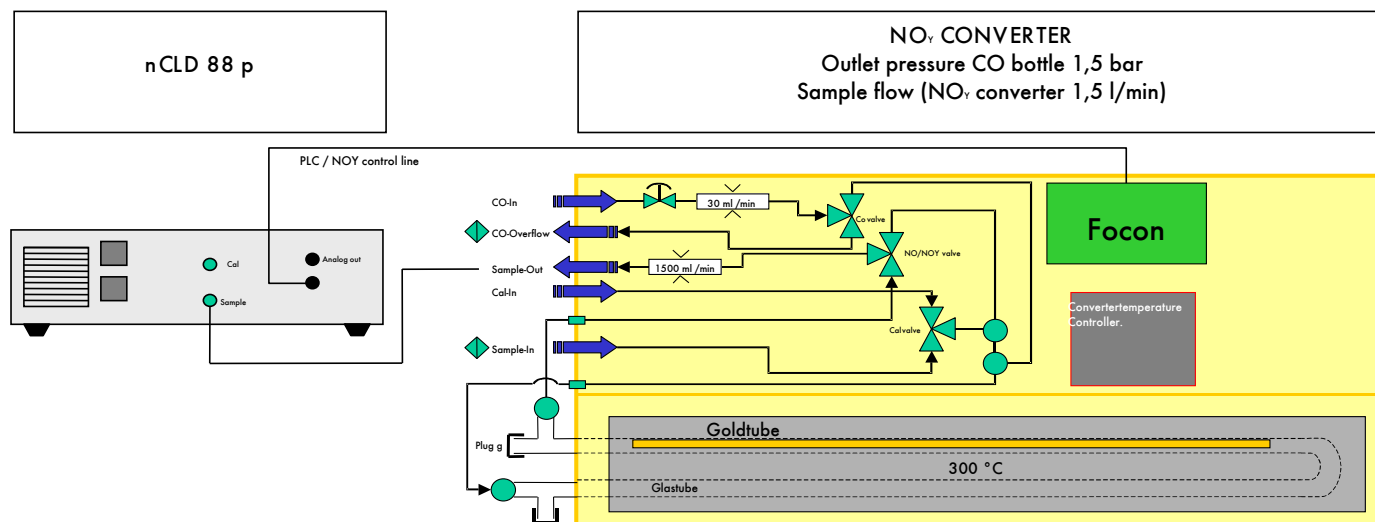
CON 765

Sample flow rate	depending on CLD: nCLD 88 p: 0.3 l/min nCLD 899: 0.7 l/min CLD 780 TR: 3 l/min	Supply Gas	CO 99.999: 30 ml/min outlet press. CO bottle: 1.5 bar
Converter volume	24 ccm	Power required	320 Watt
Converter temperature	300 °C (regulated)	Supply voltage	230 V/50 Hz, 115 V/60 Hz
Converter efficiency	> 90%	Interface	digital, fits with ECO PHYSICS nCLD's
Converter material	gold	Dimensions	height: 120 mm width: 290 mm length: 650 mm
Temperature range	5 - 40 °C	Weight	12 kg
Humidity tolerance	5 - 95% rel. h (non-condensing, ambient air and sample gas)	Delivery includes	converter incl. gold tube power cable interface cable to nCLD 88, nCLD899 or TR operation manual
Input pressure	ambient (600–1'100 mbar abs.)		
Flow settings	selectable sample intake: - direct into converter tube or - through valve, allowing fully automatic calibration. - switching mode: NO&NO _x		

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FLOW DIAGRAM

ECO PHYSICS reserves the right to change these specifications without notice.



ECO PHYSICS INC. . 3915 Research Park Drive, Suite A-3 . ANN ARBOR, MI 48108-2200 . USA . Phone: (734) 998-1600

sales@ecophysics-us.com . www.ecophysics-us.com