

# ANALYZER CLD 88 sp

Chemiluminescence NO-analyzer combined with integrated ultrasonic flowmeter (F<sub>ENO</sub> test)



## Your advantage:

**Noninvasive detection of lung inflammation**

**In- and expiratory analysis of NO-concentration (oral, nasal, offline)**

**Integrated spirometer**

**Single and multiple breath technique**

**Verification of NO therapy**



With the publication of the ATS and ERS recommendations<sup>1/2</sup>, measurements of exhaled nitric oxide have become an easy, reliable and quantifiable method to detect airway inflammation. The extremely high sensitivity and fast response time of the NO-analyzer combined with the very low dead space and large flow meter range allow the use of this system even on neonates. The instrument is designed for continuous, simultaneous measurement and display of NO values, flow rate and volume of the in- and exhalation. The instrument fulfills the ATS and ERS recommendation for single and multiple breath test (F<sub>ENO</sub>) and nasal NO measurement. Ease of use and the open concept guarantee flexibility for standard applications as well as scientific research. The optional DENOX 88 module supplies NO free air and controls the expiratory flow during the single breath test.



The unique combination of nitric oxide measurement and spirometer opens up new horizons in the pulmonary function testing. The leading edge measurement enables early detection of airway inflammation as well as therapy control after drug delivery. The application ranges from neonates to adults, single and multiple breath testing. The instrument may be used for any measurement where NO can be detected in gases.

## Standard applications:

- Single breath test for cooperative patients (single breath infants and adult F<sub>ENO</sub>)
- Multiple breath test for non cooperative patients, e.g. neonates (multiple breath F<sub>ENO</sub>)
- Nasal NO-production (nasal NO)
- Lung function testing (infants and adults)

The flexible concept of the ANALYZER CLD 88 sp enables future hard and software upgrades as well as easy adaptation for scientific research applications.

The optional DENOX 88 module supplies the required NO free air to the patient. The integrated adaptive flow control enables even pre-school kids to perform the ATS / ERS recommended single breath test. For non-cooperative patients the instrument offers the multiple breath test and a continuous flow of NO free air to reduce the work of breathing. Selectable sample flow rate and reusable dead space reducer (DSR) enables the measurement even on neonates.

The software package SPIROWARE® with „Add on Tools“ allows easy data collection and analysis. The printable report is in accordance with the ATS / ERS recommendation and may be adapted to custom specific needs.

Low yearly maintenance costs, integrated test software, local service and standard calibration gas guarantee economic and low running costs during the lifetime of the instrument.

The measurement of exhaled nitric oxide offers since the publication of the ATS / ERS recommendation an easy to perform and reliable method to detect airway inflammation.

## Specifications CLD 88 sp

### NO-measurement:

Measuring ranges:	0.1 – 5000 ppb, four ranges selectable
Min. detectable concentration:	0.06 ppb *
Noise at zero-point ( $1\sigma$ ):	0.03 ppb *
Zero drift:	< 0.5 ppb per 6 h
Linearity:	± 1% full scale
Lag time:	< 0.5 sec, software compensated*
Rise time (T90):	< 100 milliseconds
Sample flow:	selectable type 1 or 3 (110 or 330 ml/min)

### Flow measurement:

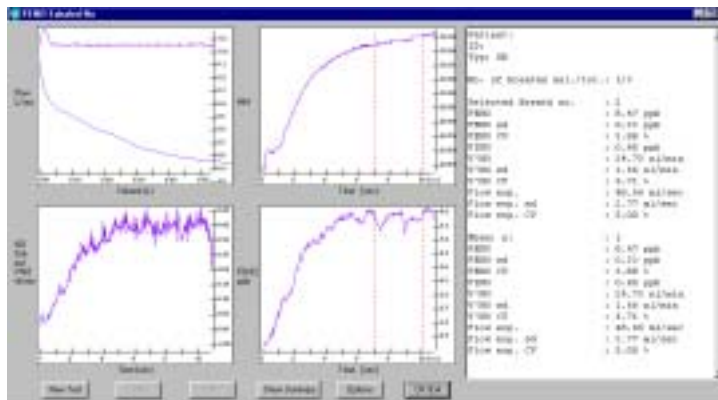
Measuring range:	± 0.5 l/s (DSR small: VD 1.9 ml, optional) ± 1.5 l/s (DSR medium: VD 7.2 ml, optional) ± 16 l/s (Spirette)
Min. detectable flow:	0.6 ml
Accuracy:	± 2 %

### General:

Temperature range:	10 – 40 °C
Humidity tolerance:	5–95% rel. humidity (non condensing)
Ozone generator:	internal, maintenance free (no external supply gas required)
Power consumption:	400 VA
Supply voltage:	100 - 240 V/50 - 60 Hz
Interface:	RS 232 (Standard)
Weight:	24 kg
Dimensions:	H x W x D: 135 x 500 x 540 mm (5 ¼ x 19 x 17 ")
System includes:	Analyzer CLD 88 sp, integrated ultrasonic spirometer, sample tube type 3, mains- and RS232-cable, operator's manual, and software "SPIROWARE" with "Add on Tools"

(\*) Depending on sample flow

(Note: Computer, printer, NO-calibration gases and NO free air supply are not part of delivery)  
Documentation in English language only



Graphical and numerical data analysis

- 1) Recommendations for Standardized Procedures for the Online and Offline Measurement of Exhaled Lower Respiratory Nitric Oxide and Nasal Nitric Oxide in Adults and Children—1999, ATS BOARD OF DIRECTORS, JULY 1999
- 2) ERS / ATS Statement „Measurement of exhaled nitric oxide in children, 2001“, Eur. Respir. J 2002;20:223 – 237

ECO MEDICS reserves the right to change these specifications without notice. Manufactured by ECO PHYSICS AG



International:

ECO MEDICS AG • PO box • CH-8635 DUERNTEN • TEL +41 55 240 13 13 • FAX +41 55 240 85 85 • E-MAIL INFO@ECOMEDICS.COM • WWW.ECOMEDICS.COM

USA:

ECO PHYSICS Inc. • ANN ARBOR, MI 48108-2200 • TEL +734 998 1600 • FAX +734 998 1180 • E-MAIL ECOPHYSB@C.NET • WWW.ECOPHYSICS-US.COM

CLD701-V14