



**The concept  
is modularity.**



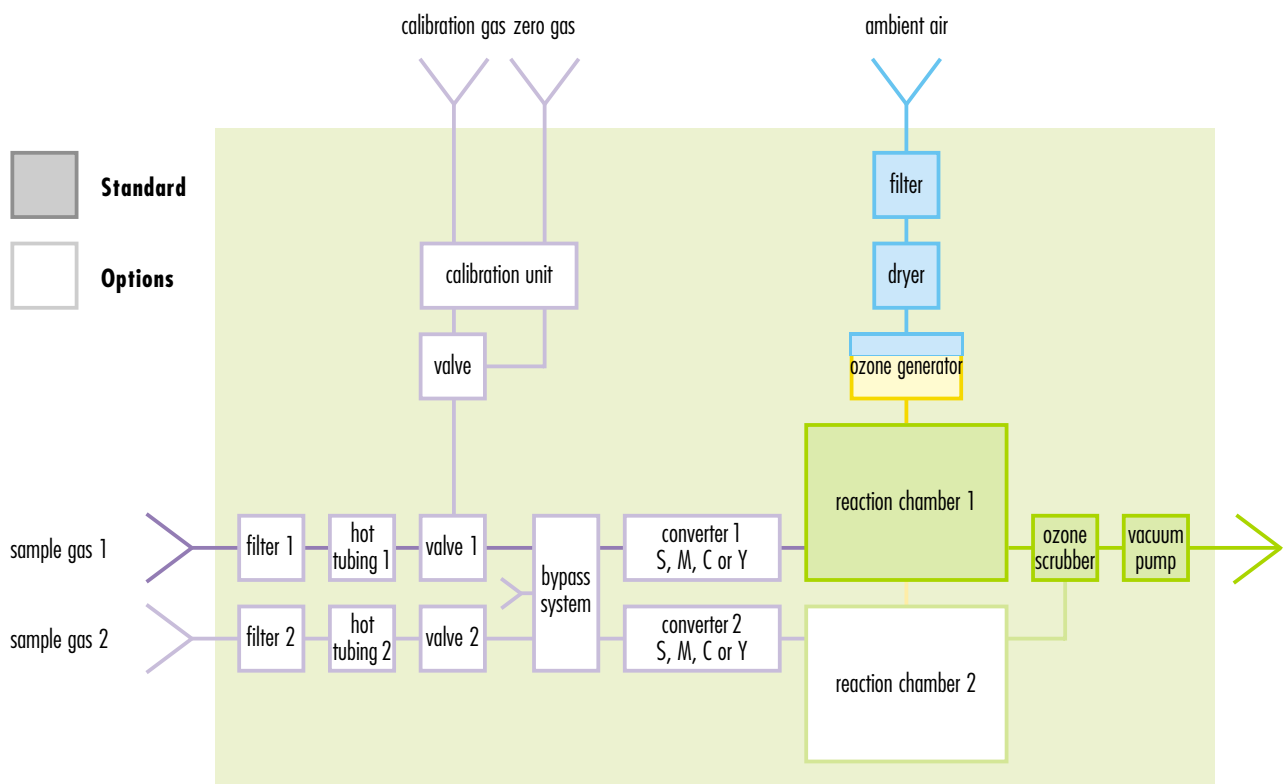
ECO PHYSICS

Measurably better.

# Customized measuring instruments for every task.

The ECO PHYSICS CLD 800 series is a new equipment generation featuring a unique modular design. This means that each analyzer can be tailored exactly to your requirements. In other words you only buy what you really need. If your requirements grow, the analyzer can be upgraded at any time.

## The modular concept



### Basics reduced to the minimum.

The principle of chemiluminescence detection (CLD) refers to the reaction of the NO in the sample gas with ozone. So, in every CLD analyzer you will find a powerful ozone generator and an ozone scrubber after the reaction chamber (see above). This reaction chamber is the centerpiece where the chemiluminescent light from the gas reaction will be detected. The measured light is proportional to the NO concen-

tration leading to the desired analytical result.

To fulfill your specific measurement task, you may need some options. Start with the definitions on the next page and build your personal analyzer.

Due to the modular concept this procedure assures the best price/performance ratio for you.

### Follow this procedure to define your personal analyzer.

Define in a first step the most important criteria such as the gas components to be detected, the number of channels and the measuring range. Thus, you

derive your basic configuration. Further options can be added later. Add your findings in the blank space after the title "your analyzer" below. The leading "8" indicates a CLD of the series 800.

### Measuring range

What is the highest concentration of nitrogen oxide or nitrogen-containing gases in your intended measurement task? Select one of the four values and write it into the second column after the "8" behind the title "your analyzer".

**Explanation:** If you estimate your highest concentration to be below 5000 ppm, you will have the choice of full range of any figure between 5 and 5000 ppm, e.g. 33 ppm or 850 ppm.

up to 5000 ppm =	8	2		
up to 500 ppm =	8	4		
up to 50 ppm =	8	6		
up to 5 ppm =	8	8		

### Reaction chambers

You may choose a second channel (second reaction chamber), otherwise leave the space in the third column blank after the title "your analyzer".

**Explanation:** A second channel is necessary, if you want to measure NO<sub>2</sub>, NH<sub>3</sub> or NO<sub>x</sub> amines beside the prime information about NO<sub>x</sub>, or NO respectively. In general, the second measurement range should be identical to the first. The only case where you can select a different range is when you operate the CLD in dual mode with two sample inlets. The only choice is in this case the combination CLD 824 d.

up to 5000 ppm =	8	x	2	
up to 500 ppm =	8	x	4	

### Gas components

Depending on the type and concentration of the gas components in your sample gas you may select an appropriate converter. Put the respective letter in the fourth column after the title "your analyzer".

**Explanation:** For general purposes and rough conditions select the **steel converter S**. However, if your gas sample is a simple mixture, select the **metal converter M** for higher concentrations, or the **molybdenum converter Y** for lower concentrations. The **catalyst C** is best suited for the total conversion of amines (including ammonia) and nitrogen oxides.

steel =	8	x	x	S
metal =	8	x	x	M
molybdenum =	8	x	x	Y
catalyst =	8	x	x	C

**Your analyzer:** ECO PHYSICS CLD 8

### Options

By completing the table above you have defined the basic configuration of your personal analyzer. To choose further options we are happy to assist you with our expertise.

In this case we need answers to the following question referring to the physical conditions of your measurement task, such as

- **gas composition** (in particular humidity and CO<sub>2</sub> concentrations)
- **temperature of the sample gas**
- **intended sample preparation** (e.g. use of a gas cooler)
- **sample inlet pressure** (variable or stabilized)

<b>pressure regulation</b> (600 – 1200 mbar)	<b>r</b>
<b>heated inlet</b> (hot tubing)	<b>h</b>
<b>second sample gas inlet</b> (dual)	<b>d</b>
<b>calibration unit</b> (excluding option r)	<b>l</b>
<b>calibration valve</b> for span gas	<b>v1</b>
<b>calibration valves</b> (zero & span gas)	<b>v2</b>
<b>filter</b> for sample gas inlet	<b>f</b>
<b>prechamber</b> (only CLD 86/88)	<b>p</b>
<b>sliding rails</b> for rack mount	
Additional options on request	

# CLD 800 Series

## Specifications

Measuring range	four user-defined ranges (within 4 decades)
Linearity within range	< 2% of full scale
Temperature range	5–40 °C
Humidity tolerance	5–95% rel. h (noncondensing, ambient air and sample gas)
Ozone generation	internal ozone generation (without external gas supply)
Power requirement	400 VA (incl. vacuum pump and ozone scrubber)
Supply voltage	90–250 V/50–60 Hz
Serial interface	RS 232
Analog output	4–20 mA, into 500 Ω max.
Dimensions	Height: 133 mm (5 1/4") Width: 450 mm (19") With moulding: 495 mm Depth: 545 mm
Weight	from 21 kg

### Delivery includes

CLD 8x/CLD 8xx,  
power cable, analog cable,  
manual

### Options

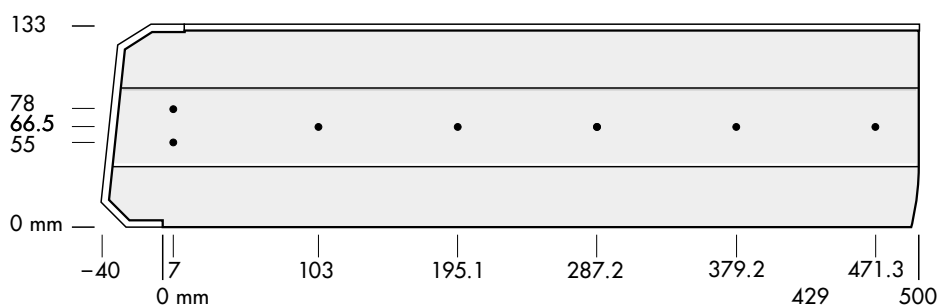
- S steel converter
- M metal converter
- Y molybdenum converter
- C catalyst converter
- r electromechanical sample pressure regulation
- h heated inlet (hot tubing)
- d dual sample gas inlet
- l calibration unit (gas divider)
- v1 calibration valve for span gas
- v2 calibration valves for zero gas and span gas
- f filter for sample gas inlet
- p prechamber (only CLD 86/88) sliding rails for rack integration

Additional options on request

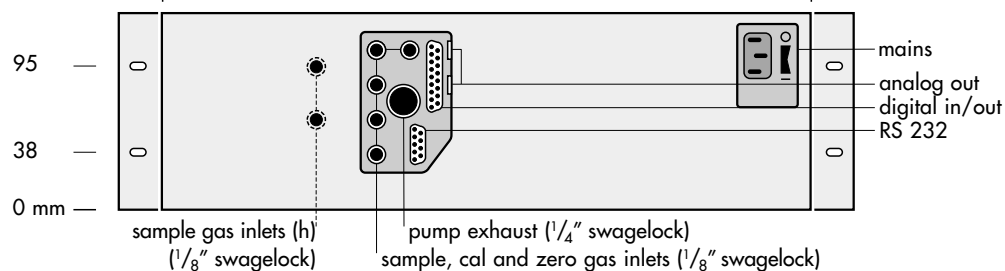
ECO PHYSICS reserves the right to change these specifications without prior notice.

## Principle dimensions

Side view



Rear view



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