

## AL5001 Features

- ▶ Very fast, continuous, real time measurements
- ▶ Unique sensitivity limit of 1ppb
- ▶ Automatic calibration within minutes
- ▶ High linearity range from 1ppb to 100ppm
- ▶ Special aircraft version



The AL5001 from Aero-Laser is a fast carbon monoxide (CO) monitor with an unique sensitivity below 1ppb (parts per billion). The detection of CO is based on a fluorimetric method, employing the excitation of CO at 150nm. The fluorescent light is measured with a highly sensitive photomultiplier, allowing for a very large dynamic range and an excellent selectivity. See [1] for more details.

The AL5001 calibrates within minutes, using only a low amount of calibration gas and an in-built zero gas source. The calibration procedure is fully automatic and can be scheduled in custom-set time intervals. The gas concentration is displayed in real time and can be logged via a standard RS-232 interface. All settings can be made on an input panel or by remote control software. Contrary to the AL5002 the AL5001 is not equipped with an internal data storage.

The instrument is rugged and designed for field campaigns in rough environment, as well as for laboratory applications. There is a special aircraft version with 24V DC power supply. The AL5001 is widely used in remote monitoring stations and air quality/climate research campaigns.

[1] C. Gerbig, S. Schmitgen, D. Kley, A. Volz-Thomas, K. Dewey, D. Haaks, *An improved fast-response vacuum-UV resonance fluorescence CO instrument*, J. Geophys. Res. 104 D1 (1999) 1699

## Specifications

- |                                  |                                                                                                         |
|----------------------------------|---------------------------------------------------------------------------------------------------------|
| ▶ CO detection technique         | VUV fluorescence                                                                                        |
| ▶ Linear detection range         | ~ 1ppb - 100000ppb                                                                                      |
| ▶ Detection limit                | 2.0ppb (integration time 2s)<br>0.8ppb (integration time 10s)                                           |
| ▶ Rise and fall time (10% - 90%) | 2.0s (fast version with membrane pump)                                                                  |
| ▶ Sample gas pressure            | < 200mbar - 1200mbar<br>equal to altitudes up to 12000m for airborne application                        |
| ▶ Sample gas temperature         | 0°C to +40°C                                                                                            |
| ▶ Calibration and zeroing        | Fully automatic                                                                                         |
| ▶ Operation                      | Conveniently large touchscreen or remote software via RS-232                                            |
| ▶ Data output                    | Real time on touchscreen or via RS-232 interface<br>(SQL-based graphic data logging software available) |
| ▶ Weight and dimensions          | 22kg, fit for 19" rack (whd: 45cm × 18cm × 59cm)                                                        |
| ▶ Power requirements             | 110 VAC / 220VAC or 24VDC (aircraft version), < 100W                                                    |