

Ownership

You don't have to be a scientist or have specialised technical skills to be able to use COVOX². The system software is very easy to use without the need for a complex manual.

Costs

Running costs will be important to you. We do not make use of disposable sensors such as the electro-chemical devices to be found in some systems or disposable face masks, therefore running costs are minimal.

Maintenance

You will not have to concern yourself with day to day maintenance. COVOX² is maintenance free, however annual servicing is recommended.

Student Proofing

COVOX² is an integrated system and ideal for use in teaching labs, where delicate exposed sensors found on many systems are often damaged. With COVOX² everything is contained within a single enclosure and kept out of harms way.

Hygiene

Hygiene simply involves cleaning the breathing valve in soapy water. The breathing valve is non re-breathing, which prevents cross contamination of the breathing tubes.

Favourite Software

Within reason, you can install on the COVOX² hard drive, your favourite software, which may be a wellness or even an advanced analysis program.

Reliable Data

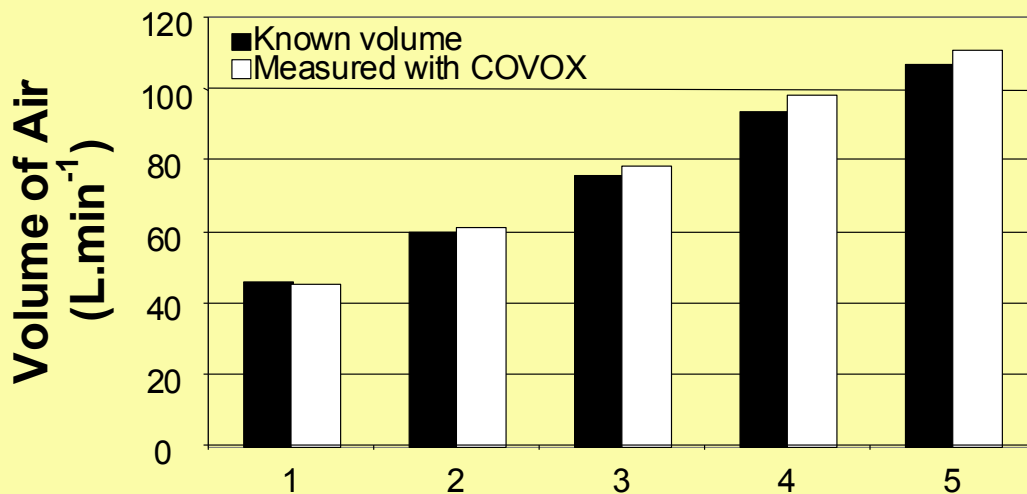
You can expect accurate repeatable data from COVOX². The following report

Report for COVOX on-line gas analyser by Dr Daryl Wilkerson (exercise physiologist at the University of Exeter).

The remit for this short report was to assess the accuracy of the COVOX online gas analyzer for measuring gas volume and oxygen concentration.

Volume Assessment

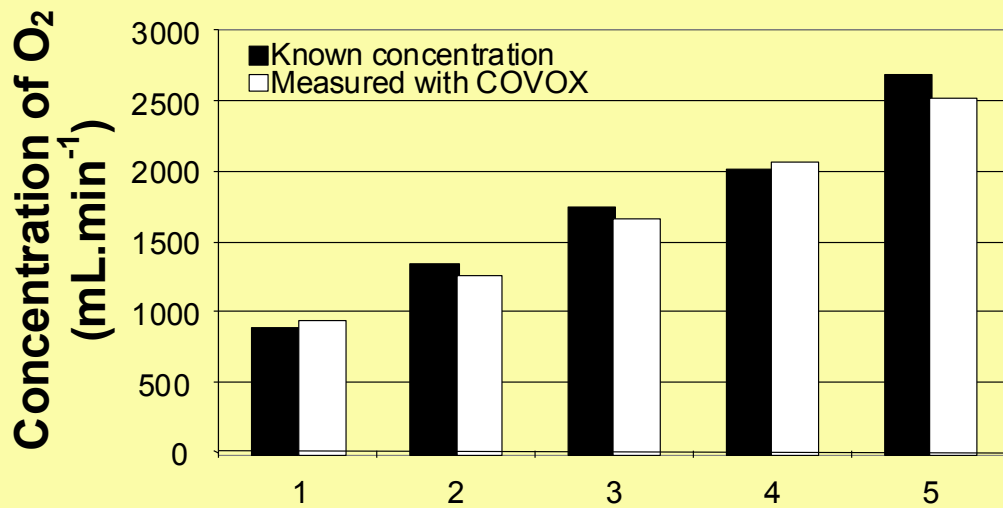
To determine the validity of the volume measurement a respiratory pump in the form of a motorised calibration syringe was used (VacuMed, CA, USA). This equipment enables online verification of the performance of gas flow transducers at a range of respiratory rates (from 6-59). For the test on the COVOX machine tidal volume was set at 2 L.min⁻¹ and respiratory rates examined were between 15-52.5. The calibration syringe was connected to the COVOX machine in the standard way (i.e. taking the place of the human participant) and delivered volumes from 30-105 L.min⁻¹, with a $\pm 1\%$ error. The volumes measure by the COVOX machine for each of these known volumes are shown in the figure below.



The Covox machine performed within accepted margins of error, fairing better than the industry standard. Overall the mean error for the differing measured volumes was 3.5% of the known volume.

Oxygen Concentration Assessment

The oxygen concentration assessment was also completed via the use of VacuMed equipment. This equipment allows the simulation of a range of differing metabolic rates via the manipulation of the concentrations of oxygen which are delivered to the COVOX machine. For this test, five known concentrations of oxygen simulating metabolic rates from 900-2500 mL.O₂.min⁻¹ were passed through the system. The results are shown in the figure over the page.



As with the volume check, the COVOX machine performed to the required level for fitness assessment and scientific research. The mean error for the 5 differing metabolic rates was 5.2% of the known concentration.

Overall this machine provides an accurate output for both volume and oxygen concentration, performing in line with, or better, than most commercially available online gas analysers.