

# Oxycon Pro® - The New Features

## Oxycon Pro in Detail:

Compact stress testing unit for precise and reliable determination of cardiopulmonary and related parameters in all patient groups. Oxycon Pro is designed for recording intrabreath, breath-by-breath (open system) or averaged (mixing chamber) data.

The optional 12-lead ECG is fully integrated in the system, i.e. operation of an external ECG during the test is not required. All relevant data and graphs can be displayed on screen next to the CPET data and stored to a common database.

### Hardware and Software

- Compact design with integrated O<sub>2</sub> and CO<sub>2</sub> analyzers
- 12-lead ECG (option)
- Ventilation measurement via a highly-precise, bidirectional, digital volume sensor (TripleV)
- Automatic calibration
- Pentium computer technology
- Ink-jet printer
- MS-Windows™
- Interface for peripheral equipment

Measurement Range		Accuracy
Ventilation (V'E)	0 to 300 L/min	2% or 0.05 L/min
O <sub>2</sub> uptake (V'O <sub>2</sub> )	0 to 7 L/min	3% or 0.05 L/min
CO <sub>2</sub> release (V'CO <sub>2</sub> )	0 to 7 L/min	3% or 0.05 L/min
RER	0.6 to 2.0	4%

### Volume Sensor

Volume	0 to 10 L
Accuracy	50 ml or 2%
Resolution	3 ml
Flow	0 to 15 L/s
Accuracy	70 ml/s or 3%
Resistance	< 0.1 kPa/L/s at 15 L/s

### O<sub>2</sub> Analyzer

High-speed analyzer, differential paramagnetic principle		
Range	0 - 25%   0 - 60%   0 - 100%	
Accuracy	0.05%   0.2%   optional	
Resolution	0.01%   0.02%	
Stability	0.02%/h	
Minimum rise time	T <sub>10-90</sub> 40 ms	

### CO<sub>2</sub> Analyzer

High-speed analyzer, infrared absorption	
Range	0 - 15%
Accuracy	0.05%
Resolution	0.01%
Stability	0.02%/h
Minimum rise time	T <sub>10-90</sub> 40ms

### ECG

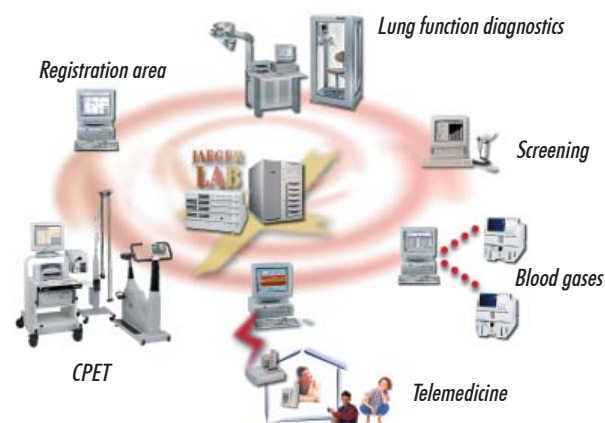
Leads	12
Resolution	13 Bit, 2.44µV/Bit
Interface	RS 232
Frequency Range	0.05 to 100 Hz
Gain	5, 10, 20 mm/mV

### Dimension/Weight

Height*Width*Depth	24*18.6*43 cm (9.5*7.1*16.9 inches)
Weight	10 kg (22 pounds)
Power supply	100 to 240 V, 50/60 Hz, 75 Watts

Oxycon Pro is the perfect solution, if a favorably priced cardiopulmonary exercise testing system including ECG recording at rest and during exercise is required. Oxycon Pro allows you to precisely quantify, analyze and differentiate the functional cooperation of heart, lungs, circulation and metabolism. Oxycon Pro is a secure investment for cardiologists, pediatricians, pulmonologists, intensive care and occupational medicine physicians, ... and the ideal system for precise assessment of a subject's physical performance.

- Windows™-based user surface
- Automatic calibration programs
- Fast and highly-precise gas analyzers
- Precise, low-resistance volume sensor without flow limitation in the physiological range
- Standard measurement programs:
  - ▶ Spirometry/Flow-Volume
  - ▶ Breath by Breath, Intrabreath, Mixing Chamber (option)
  - ▶ Integrated, paperless 12-channel ECG (option)
- Interpretation program „IntelliSupport“
- Detailed, informative reports
- All components from one manufacturer
- Modular expansion
- Interfaces for CPET equipment and other systems, such as external ECG
- Data management for practice administration systems or hospital network



### Patient Data Administration:

- High-performance patient database for effective organization
- ▶ Saving of related graphic data, evaluations and results
  - ▶ Comparison of a patient's test data
  - ▶ Patient data administration with permanent patient list and search function, suitable for network operation

### Jaeger Lab:

- Last but not least ...
- ▶ Oxycon Pro can be integrated into your hospital, practice or laboratory administration system along with other equipment of the MasterScreen series, blood gas systems, sleep lab systems or NeuroCare equipment.

### Quality and Safety

- ◆ VIASYS Healthcare is certified according to ISO 9001/IEC 13485.
- ◆ Oxycon Pro® meets the requirements of European (Medical Device Directive) and US (FDA) Law.



## Oxycon Pro in Detail:

	Oxycon Pro
O <sub>2</sub> /CO <sub>2</sub> analyzer	●
Digital volume sensor (TripleV)	●
Pentium computer	●
Ink-jet printer	●
Trolley	○
<b>Standard programs:</b>	
Patient Data	●
Automatic Volume Calibration	●
Volume Calibration via manual calibration pump	○
Automatic Gas Analyzer Calibration	●
Ambient Module	●
Spirometry/Flow-Volume	●
Off-line Blood Gases/Lactate	●
Breath by Breath	●
Intrabreath	●
Mixing Chamber	○
High/Low FiO <sub>2</sub>	○
Indirect Calorimetry	○
- Hood	○
- Ventilator	○
- Hood with High FiO <sub>2</sub>	○
- Hood for Children	○
Cardiac Output	○
Compliance during Exercise	○
P <sub>0.1</sub> during Exercise	○
Resting and Stress ECG	○
Screen and Printer Report	●
<b>Interpretation program:</b>	
IntelliSupport	●
<b>Generation Programs:</b>	
ReportDesigner	●
Layout Editor	●
Profile Editor	●
Parameter Text Editor	●
LanguageMaker	●
User Predicted Values	●
Predicted Value Generation	●
<b>Other:</b>	
Database	●
Load Control	●
Plug in for administration systems	○
ECG suction system	○
Pulse oximeter	○
● Standard	
○ Option	

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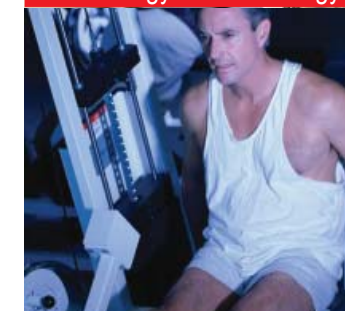


CardioPulmonary  
Diagnostics

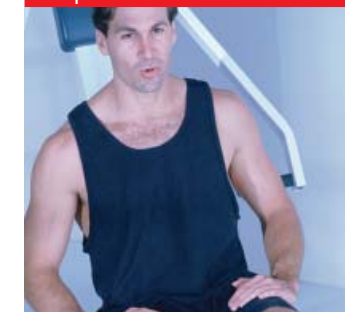
# Oxycon Pro®



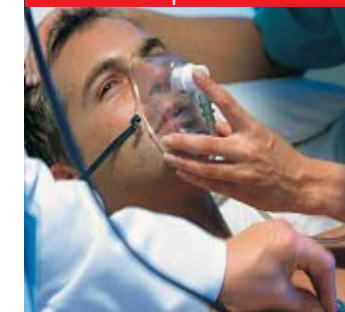
Cardiology & Pulmonology



Sports Medicine & Fitness



Rehab/Occupational Medicine



Intensive Care



**VIASYS™**  
HEALTHCARE  
*Excellence For Life*  
RESPIRATORY  
TECHNOLOGIES

CPET of the Highest Quality





# Oxycon Pro® - Comfortable Cardiopulmonary Exercise Testing

## Cardiopulmonary Exercise Testing with Ease

A modern diagnostic system must be both technically convincing and tailored to today's clinical needs of laboratory routine. To meet these demands Oxycon Pro was made quicker, more accurate and above all more economical than any piece of equipment ever designed for this field. Oxycon Pro is an expert system for routine CPET and offers you outstanding performance features and unparalleled ease of operation. So you can confidently give your attention to your patient and not to your equipment. The modular concept provides sufficient possibilities for upgrades or subsequent expansion whenever required or allowed by your budget.

## Convincing in Every Way

### Speed and Precision

To meet these high demands, Oxycon Pro uses sensors that exceed the common recommendations. The patented TripleV volume sensor is a precise volume sensor with low resistance and no flow limitations in the physiological range. TripleV guarantees precise measurements and is smaller and lighter than competitor products, which means, it is more convenient for the patients who have to wear a mask or mouthpiece with the sensor during the test. Unlike other devices which require manual calibration, the volume sensor and gas analyzers are checked automatically, thus saving time and effort on the part of the operator.

### Economy

In the time a standard stress ECG or pulmonary exercise test normally takes, Oxycon Pro allows you to run a complete, combined exercise test. A well-founded diagnosis can be made based on the analysis of all available stress test data measured in one unit. Oxycon Pro combines the necessary tools for cardiopulmonary exercise testing in one small and compact package. Not only are capital costs low in comparison with other less than fully-featured solutions, but operating costs are also remarkably reduced.

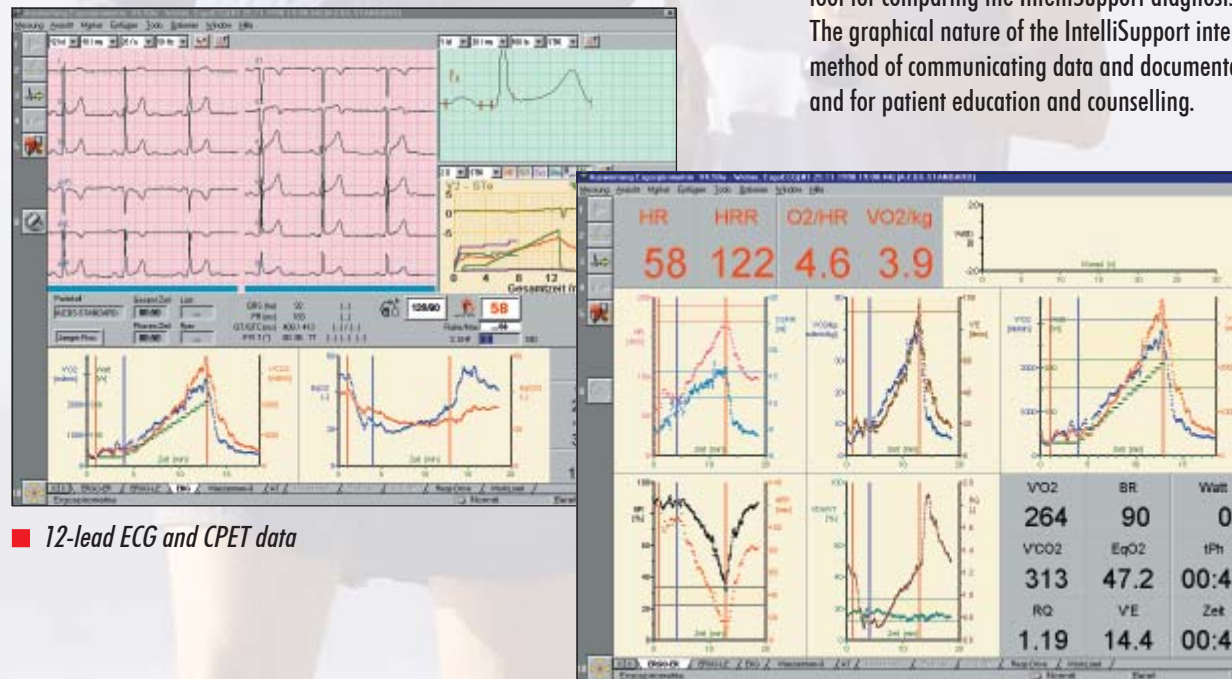
Oxycon Pro needs no chemicals, expensive disposable sample tubes or disposable sensors. All that is required to run the system is a calibration gas and disposable ECG electrodes (if you choose not to use our optional lightweight gold suction electrodes). And, of course, ink and paper to print out your reports!



## Recording Modes: Breath-by-Breath, Intradbreath or Mixing Chamber

The „heart“ of the Oxycon Pro is its precise and reliable cardiopulmonary exercise testing program. Cardiopulmonary data and resulting parameters can either be recorded in Breath-by-Breath, Intradbreath or Mixing Chamber mode.

User-specific workload protocols for exercise on bicycle or treadmill guide you through the measurement. The screen display is clearly structured. Preset graphs and groups of graphs show the status of the current workload phase with predicted/actual value comparison.



## An Expert System at your Fingertips

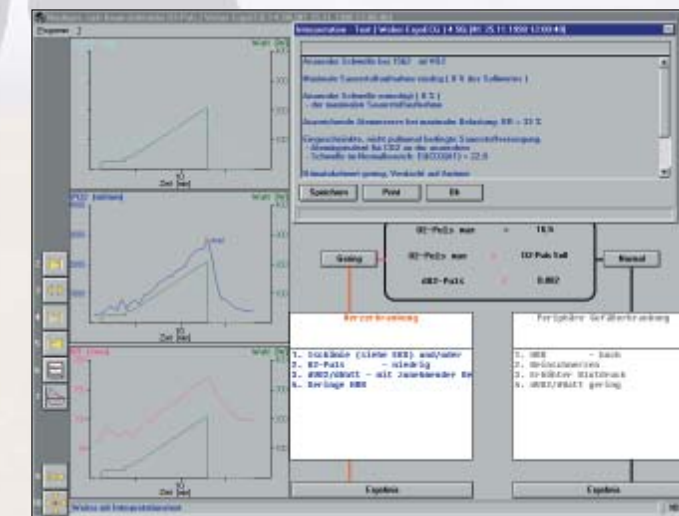
Cardiopulmonary exercise testing produces volumes of data - after all, that's what it is designed to do. However, this data needs to be properly analyzed and evaluated. In designing Oxycon Pro, we considered the time pressures faced by modern clinicians and introduced IntelliSupport, a graphics-based expert system which relieves the busy physician from time-consuming data analysis.

Based on accepted guidelines and predicted ranges described by the world renowned expert in cardiopulmonary exercise testing Professor Karlman Wasserman in his „Principles of Exercise Testing and Interpretation“, IntelliSupport guides the clinician step by step through a test to arrive at a suitable interpretation. Some clinicians will use this feature as a fast and reliable route to routine diagnosis; others will prefer to use it as a handy tool for comparing the IntelliSupport diagnosis with their own conclusions. The graphical nature of the IntelliSupport interface makes it an excellent method of communicating data and documentation visually to colleagues and for patient education and counselling.

■ Screen display during test

## Integrated Computer-based ECG: All Parameters at a Glance

A notable feature of the Oxycon Pro is the exceptional stability of the stress ECG baseline traces. 12-channel ST-monitoring is based on a 10-second interval. A clearly structured ST graph displays the ST changes in different color. In addition, automatic arrhythmia detection is provided.



## All Available from One Hand

Components which perfectly fit to each other ensure trouble-free test sequence. This is particularly important if you want to expand your system later.



■ The new ergometer generation: VIAsprint 150P



■ CPET unit with ECG screen and suction electrodes

## Perfection in Simplicity

Our developers did their utmost to create a system that you could feel comfortable with right from the start. Because we have used a standard computer with keyboard and mouse and the proven Windows user interface, do not be surprised if Oxycon Pro seems familiar to you right from the start. Consequently, training time can be reduced to a minimum and you can delegate parts of the test to your team.