

Quark CPET

Cardio Pulmonary Exercise Testing

“ Assess, Measure,
Improve my
Performance ”



Research grade Metabolic cart for
Cardio Pulmonary Exercise Testing in clinical applications



COSMED
The Metabolic Company

“Designed for any kind of cardio pulmonary exercise testing including exercise physiology, sports science and clinical exercise testing”

- | **Breath by breath gas exchange analysis (VO_2 , VCO_2)**
- | **Fully integrated with 12-lead Stress Testing ECG (option)**
- | **Automatic CPET Clinical Interpretation**
- | **Resting Energy Expenditure with mask**
- | **Mixing chamber for sport science and research applications (option)**
- | **Independently validated**



The Quark CPET is a state-of-the-art metabolic cart for gas exchange analysis (VO_2 , VCO_2) either during exercise testing or resting protocols. Its high quality components and super-fast analyzers assure unsurpassed accuracy, reliability, and real breath-by-breath analysis of pulmonary gas exchange, even at high intensity exercises.

The Quark CPET is a stationary system with both breath-by-breath and, optionally, mixing chamber sampling technology. It has been scientifically validated for both sampling techniques and in a wide range of exercise intensities.

The Quark CPET can be integrated with additional modules including fully integrated 12-lead ECG Stress testing, pulseoximetry and more.

Design & Main Features

- **Unsurpassed accuracy.** fast-response stable and durable paramagnetic technology for O_2 sensor, and rapid infrared for the CO_2 . Both analyzers can assure long periods of accurate measurements without the need of periodical replacement.
- **Breath by Breath & Mixing Chamber.** Both sampling technologies are available either during exercise or at rest conditions.
- **CPET made easy** thanks to **OMNIA**, the new generation of COSMED software designed for the entire COSMED product's portfolio. The intuitive, beautiful, and innovative user interface has brought the complex CPET procedure to a new simpler stage.
- **Low running costs and easy maintenance.** The design architecture has been conceived to reduce ordinary maintenance and to easily and rapidly solve any technical problem through the replacement of a board.
- **Independently validated.** Quark CPET is the only Metabolic cart in the market that has been validated both on different gas exchange methods (Breath by Breath and Mixing Chamber), and on the whole human physiological range (from resting to a wide range of exercise intensities).
- Integrated diagnostic quality **12-lead Stress ECG** (available either in wireless or patient cable configuration) with full disclosure and scroll back during test. High resolution ECG processing produces an exceptionally clear on-screen display and allows detailed, reliable analysis of ST segments and minimal arrhythmia changes. Available with Resting and Exercise ECG interpretation.

- Wide selection of **ergometers**, available from COSMED, including treadmills, cycle-ergometers, arm-ergometers and recumbent bikes, suitable for any clinical and research application.



During exercise, Quark CPET can perform pulmonary gas exchange measurements with integrated ECG data



COSMED stress ECGs (wireless or patient cable)

Data Management & Software

Quark CPET is provided with the **OMNIA Metabolic Modules**, designed by COSMED for CPET and REE testing and data management. Compatible with the entire COSMED product range OMNIA allows users to operate complex testing procedures with just a few training.

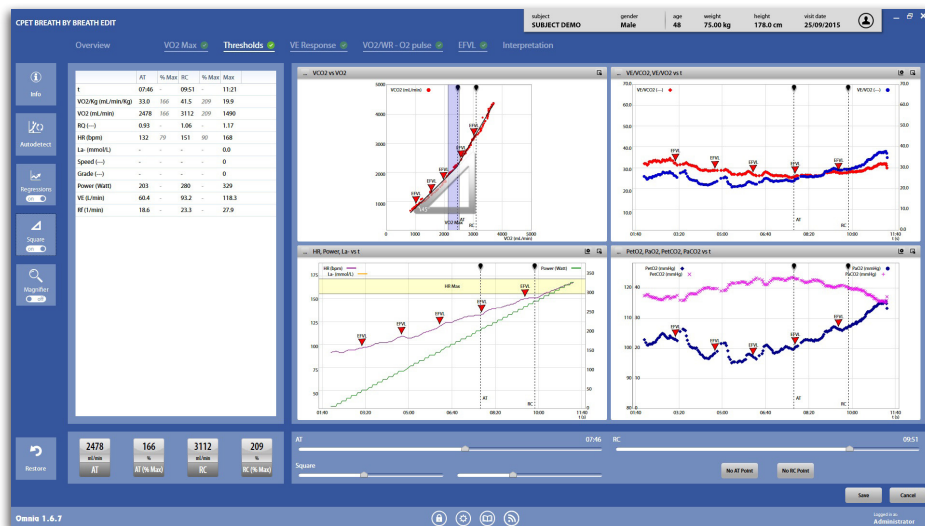
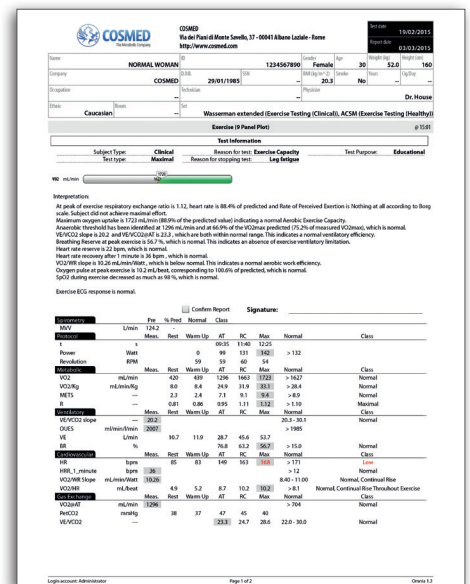
- Easy-to-use beautifully designed touch-screen (native) graphic user interface with intuitive workflow and hierarchy.
- Display data and charts through standard (9 panel plot, etc.) or user defined Dashboards.
- Built-in Exercise Protocol editor to design and save any type of protocol.
- Easy, quick and fully assisted calibration for high accuracy measurements, either for flowmeters (calibration and linearity check) or for gas sensors (zero, gain and delay).
- Real time acquisition and capture of Exercise Flow-Volume loops (EFVL) for the evaluation of ventilatory limitation.
- Powerful post-test editing phase for data filtering, calculation of thresholds (AT, RCP), VO_2 max, EFVL, VE/VCO_2 slope, intercept and other parameters requested for interpretation.
- Comprehensive interpretation tool automatically elaborates CPET tests and provides interpretation including text strings and numerical results based on latest scientific guidelines¹.

1 ATS/ACCP 2001, ESC 2009, EACPR/AHA 2012, AHA 2010

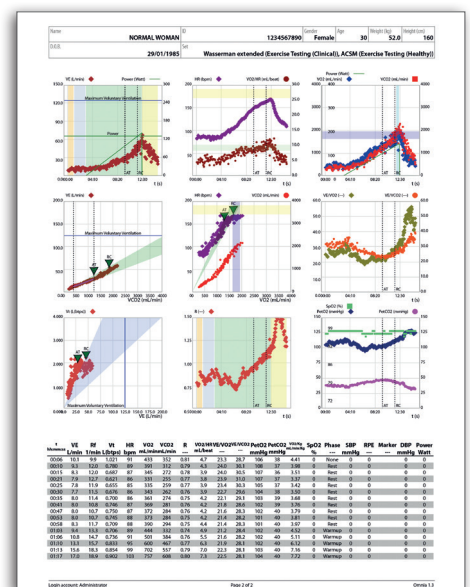


Possibility to manage/display in real time data and plots via dashboards (default and user defined)

- Ergometer control: **standard** (COSMED Bike, COSMED Treadmill, Ergoline, HPCosmos, Monark, Trackmaster) and **optional** (Archimed, BCube, BikeMax, Bosh 601, CatEye, clubLine, CSafe Treadmill, CT100-ErgocardII, Cyclus 2, ErgoFit Bike, Excalib.Sport, Excalibur, Excite-Bike, Excite-Treadmill, Imbramed-Bike, Imbramed-Treadmill, Lodebike, Powerjog, RAM770, TechnogymRun-Race, Tecmachine1800, TrackEmul, Woodway).
- Export data in .pdf, .xml, and xls formats. Import data in .xml format.
- Custom user rights management (Principal Investigator, Physician, Technician, Administrator...) with event logging.
- Compatible with Windows 7, 8, 8.1, 10 (32 or 64 bit).
- Network version with full Client-Server architecture.



Powerful post editing for calculation and reviewing of main parameters (edit Thresholds, EFVL, VE/VCO_2 , etc.)



Custom printout reporting with pictograms, comprehensive interpretation statements, editable charts and tabular data



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