

### Key Features

- △ **12-lead Stress Test ECG**
- △ **ST Segment Analysis**
- △ **Superior Digital Filtering**
- △ **Fully integrated with COSMED Pulmonary Gas Exchange systems**
- △ **Arrhythmia Analysis**
- △ **Resting ECG with Interpretation**
- △ **Windows™ Software**

12-lead Stress Test ECG for standard and integrated Cardio Pulmonary Exercise Testing



### Overview

**Quark C12** is the new 12-lead ECG designed by COSMED for stress and rest testing. Developed in conjunction with a world leader in ECG technology, Quark C12 is perfect for stationary and clinical use. All leads are transmitted through a 3 meter direct patient cable to the PCMCIA receiver card slot installed in any PC.

#### **Exceptional ECG Quality!**

Quark C12 provides exceptionally clean ECG recordings without compromising the ECG data diagnostic quality. The system has a sampling rate of 10 kHz per channel and a processing rate of 500 Hz/channel fully complying the AHA and AAMI standards. The unmatched stability of baseline can be verified even during treadmill protocols running at more than 20 Kph !!

#### **Integration with Pulmonary Gas Exchange Systems**

Only COSMED gives you the power to fully integrate 12-lead ECG with breath by breath metabolic data. Quark C12 is compatible with all COSMED systems for pulmonary gas-exchange. According to your specific field of interest you can choose between stationary and fully portable integrated cardio-pulmonary testing devices.

#### **High Versatility**

Quark C12 can be used either as a stand alone PC ECG or as an integrated Cardio Pulmonary Exercise Testing System in combination with COSMED metabolic systems. Software allows the user to select the type of test (ECG, Gas Exchange or both) by simply checking an option within the software.

#### **Perfect for stationary clinical use!**

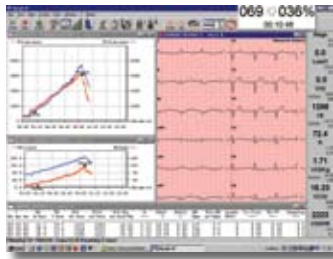
ECG set-up has never been so easy. The patient cable (3 meters) is fixed to the subject by means of an elastic belt. The light but very resistant cable improves patient comfort by maintaining reliable and quality data during any intensity of exercise. Quark C12 can be provided with different cable versions.



## Software Features

Quark C12 Windows PC software provides unsurpassed versatility and ease of use. When integrated with COSMED metabolic systems, the software can continuously display real time ECG waveforms on the same screen with gas exchange data. Each waveform can be instantly enlarged or frozen for detailed analysis. Arrhythmia analysis and accurate resting ECG interpretation are available as options.

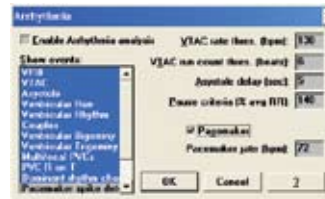
- User interface designed to provide unsurpassed versatility and simplicity of use.
- Continuous screen viewing of all 12-leads.
- True diagnostic quality waveforms.
- Exclusive filtering to eliminate artifacts while preserving raw data integrity.
- Possibility to view single or multiple leads, including zoom and freeze features.
- Current and reference ST analysis profiled for all 12 leads.



**The software shows simultaneously Gas Exchange data ( $VO_2$ ,  $VCO_2$ , etc.) and continuous 12-lead ECG.**

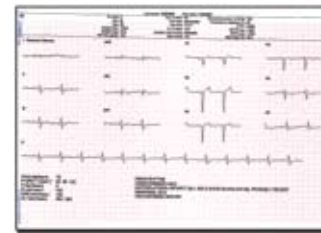
- ST depression and slope trends displayed in real time.
- Averaged QRS complexes overlapped on a reference ECG complex.
- Manual and automatic blood pressure measurements.
- Custom J-point settings.
  - » Automatic detection and capture of Arrhythmia events including PVCs, asystole, ventricular fibrillation and other typical patterns.
  - » R-R interval parameter now measured, for HR variability applications.

- » Automatic interpretation of resting ECG with professional 1 page report.
- Unlimited user defined exercise protocol.
- Predefined exercise protocols (Bruce, Balke, Naughton, Ramp etc.)
- Unlimited recordable 10 sec. events (manually or automatically activated).
- Ergometer control (requires RS232 interface).
- Gain and speed selection.
- ECG printouts on standard laser and inkjet printers.

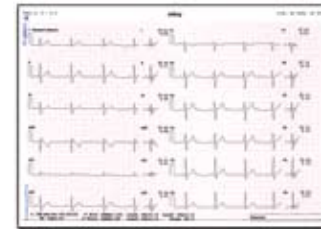


**Dialog box for Arrhythmia detection criteria configuration.**

» **New Features**



**Resting ECG report with interpretation (automatic or manual).**



**10 seconds strips real time printout (both leads and average complexes).**



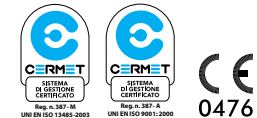
**Adjust J-point according to user defined settings.**

## Technical Specifications

Type: ..... Continuous 12-Lead ECG  
 Lead: ..... I,II,III, aVR, AVL, aVF, V1, V2, V3, V4, V5, V6  
 Acquisition: ..... simultaneous 12-Lead  
 Amplifier: ..... integrated into patient cable  
 Input impedance: ..... 47 MOhm  
 Electrodes offset: ..... 320 mV DC  
 Sampling rate: ..... 10 khz/channel  
 Processing rate: ..... 500 hz/channel  
 PCMCIA: ..... Type II PC Card 2.1 with Interface  
 Dimensions: ..... 110 x 40 x 20 mm (4,3X1,5X0,8 in)  
 Weight: ..... 190g (6,7 oz)

### Quality Standards

Equipment complies with MDD (93/42 EEC) and FDA 510(k).



## Hardware Features

### PC Configuration required

- Pentium IV or faster
- Windows XP
- 512 Mb RAM
- 20 Mb on HD space available
- PCMCIA Card Drive type II

### Options

- Arrhythmia Analysis
- Resting ECG w/ interpretation
- Blood Pressure measurement
- Pulmonary Gas-Exchange

### Cable versions

- 12 lead Standard
- 12-lead XL size (for obese population)
- 5-lead

All cables are available in both International or US colors.

### Standard equipment

- PCMCIA ECG card
- C12 Digital Cable
- 12-lead standard cable
- PC software
- Carrying case
- Belt and metal clip
- User manual
- Disposable electrodes (1 box)
- ECG paper A4 format (200 sheets)



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