



A unique diagnostic solution for complete Cardiopulmonary Assessment

- ▶ Maximal Oxygen Uptake ( $VO_2$ max) and measured METs.
- ▶ Classification of Exercise Capacity and Anaerobic Threshold
- ▶ Nutritional Assessment and resting  $VO_2$  for Fick equation
- ▶ Full Spirometry (FVC, SVC, MVV, etc.)
- ▶ Multiple scores for Cardiovascular and Pulmonary Risk analysis
- ▶ Body Composition and comprehensive Weight Management software
- ▶ Interfaces with conventional Stress Testing ECG
- ▶ Affordable, compact, and easy to use



The Fitmate MED measures maximal oxygen uptake, the Gold Standard for measuring exercise capacity and quantifying aerobic fitness. Together with exercise electrocardiography, the Fitmate MED enables cardio pulmonary stress tests to be completed without an expensive investment, complicated procedures, or specialist expertise.

Patient rehabilitation is managed with exercise prescription and weight management software according to established international guidelines.

The Fitmate MED is the first diagnostic equipment designed to provide a complete analysis of cardio pulmonary function.

## VO<sub>2</sub>Max and Real METS

- ▶ Choose between maximal and sub-maximal exercise protocols
- ▶ Real-time display of pertinent respiratory parameters
- ▶ Automatic and manual detection of anaerobic threshold
- ▶ Pre-defined (Bruce, cycle, ramp, etc.) or user-customizable exercise protocols
- ▶ Automatic exercise training heart rate zones based on oxygen uptake
- ▶ Warnings and quality control messages (mask leaks, breathing pattern, etc.) are displayed during test



Comfortable silicone masks (5 sizes, both adult and pediatric) are available for exercise testing and one universal size disposable mask for resting measurements

## Resting Energy Expenditure

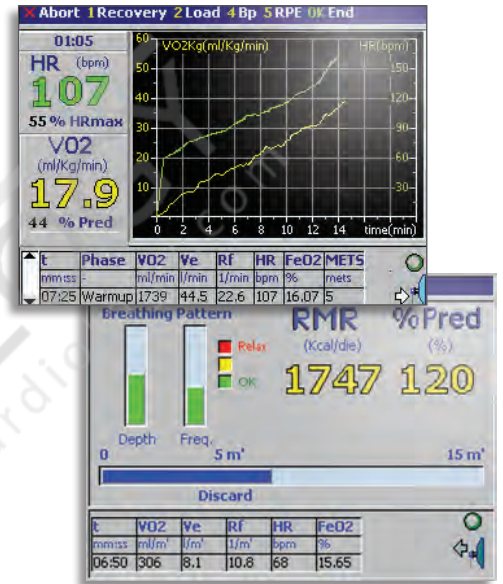
The Fitmate MED measures oxygen consumption (VO<sub>2</sub>) at rest with high accuracy, comparable with conventional metabolic carts.

## Spirometry

Complete spirometry testing (FVC, SVC, MVV, Pre/Post bronchial dilator response) is available, fully complying with ATS/ERS recommendations.

## Clinical Applications of VO<sub>2</sub>

- ▶ Actual measurement of Exercise Capacity and METs (not-estimated)
- ▶ Pre-operative evaluation for surgical risk
- ▶ Classification and prognosis of Congestive Heart Failure (CHF)
- ▶ Objective selection criteria and decision tool for heart transplant
- ▶ Differentiation between cardiac and pulmonary limitation
- ▶ Determination of exercise training intensity as part of cardiac rehabilitation
- ▶ Nutritional assessment during recovery from illness and chronic health management
- ▶ Obesity treatment and Type 2 diabetes prevention
- ▶ Identification of energy requirements for respiratory disorders (COPD, sleep disorders, Cystic Fibrosis)



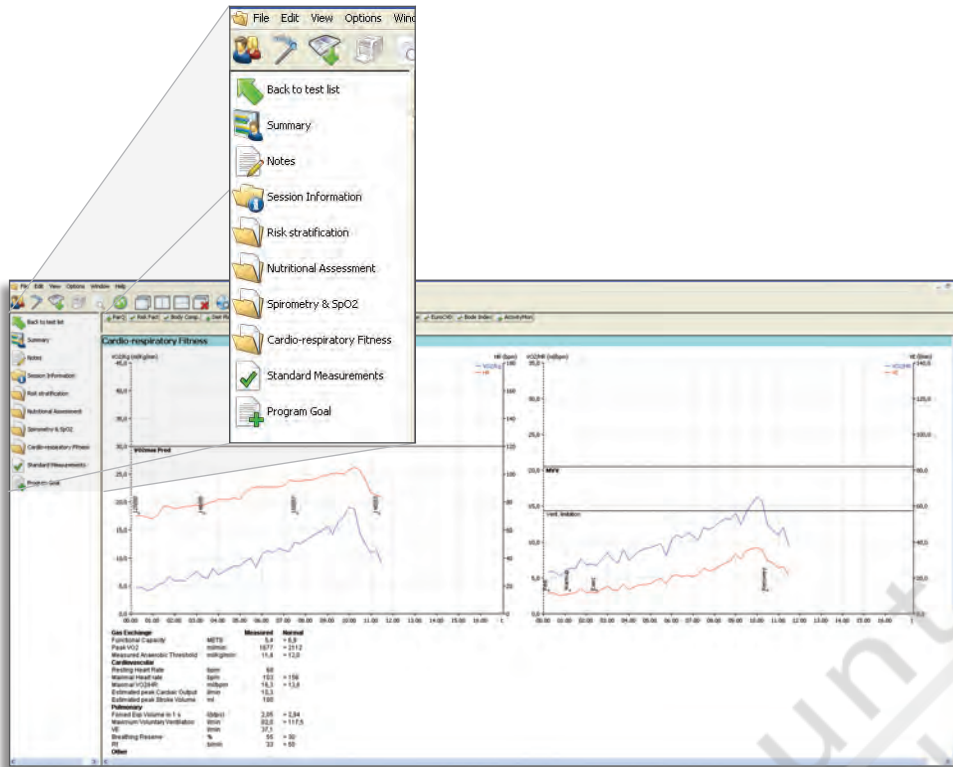
## Other Measurements

- ▶ Cardiovascular Risk Stratification (Duke Score, Framingham Index, European Heart Score, BODE Index)
- ▶ Individual weight management programs based on Energy Balance equation and diet plan based on daily caloric intake (USDA Database)
- ▶ Standard Measurements (BMI, WHR BP, etc.)
- ▶ Lifestyle monitoring (with optional physical activity monitor, the Fitmate Lifecorder)

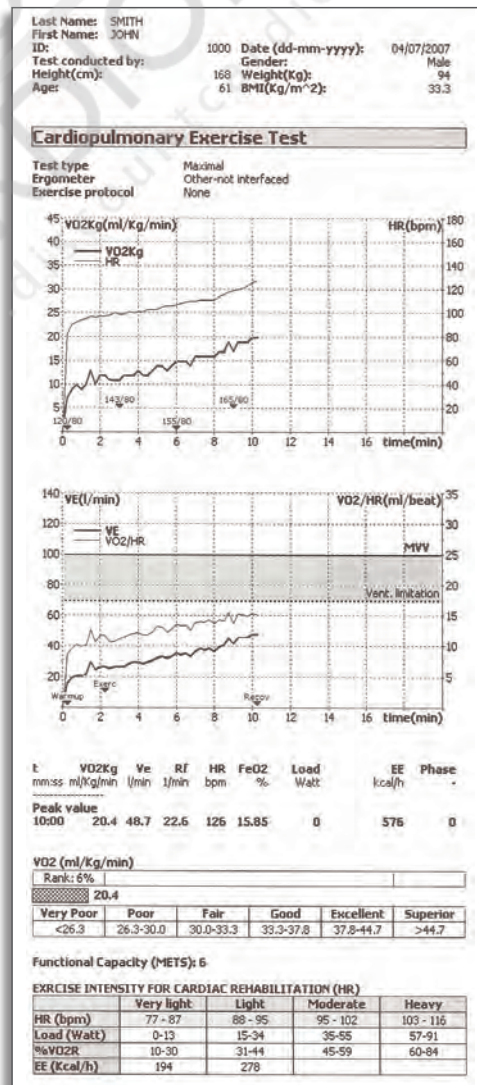
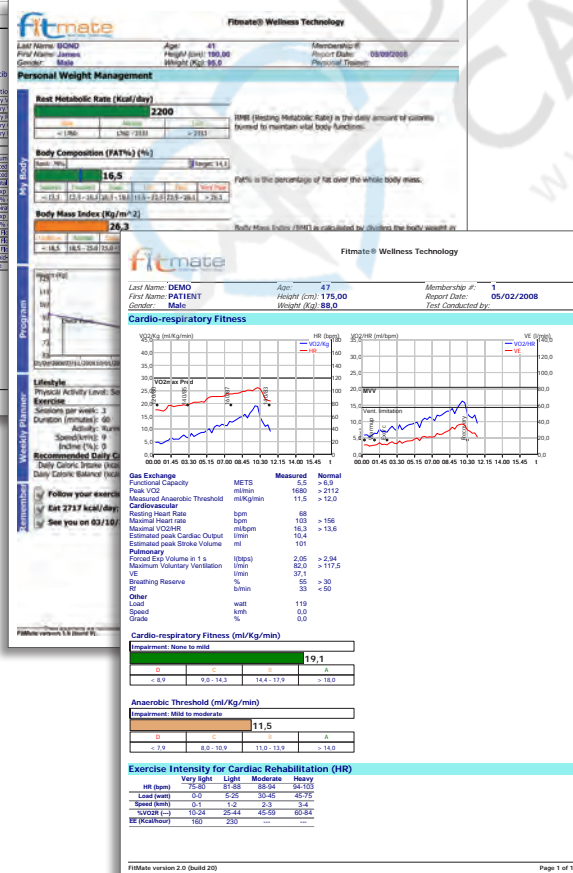
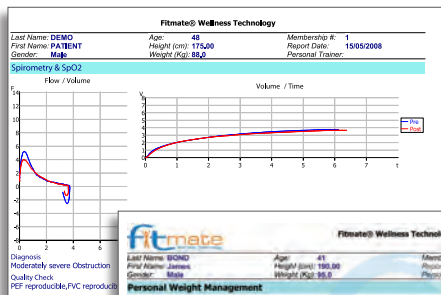
## Referencias

- Nieman, et al. Validation of COSMED's Fitmate™ in measuring exercise metabolism. *Res Sports Med*, 15:1-9 (2007)
- Nieman, et al. Validation of Fitmate in measuring REE. *Res in Sports Med*, 14:1-8 (2006)
- Bassett, et al. Validation of the Fitmate for predicting Maximal Oxygen Consumption. *Med Sci Sport Exer*, 41:260 (2009)
- Singer, et al. Comparison between Fitmate and Deltatrac in measuring REE in non-ventilated patients. *ESPEN* (2010)





Easy to replace O<sub>2</sub> cell comes in a sealed bag. Lifespan is 12-18 months and is indicated by the device.



Graph shows VO<sub>2</sub> and HR markers, and typed BP measurements

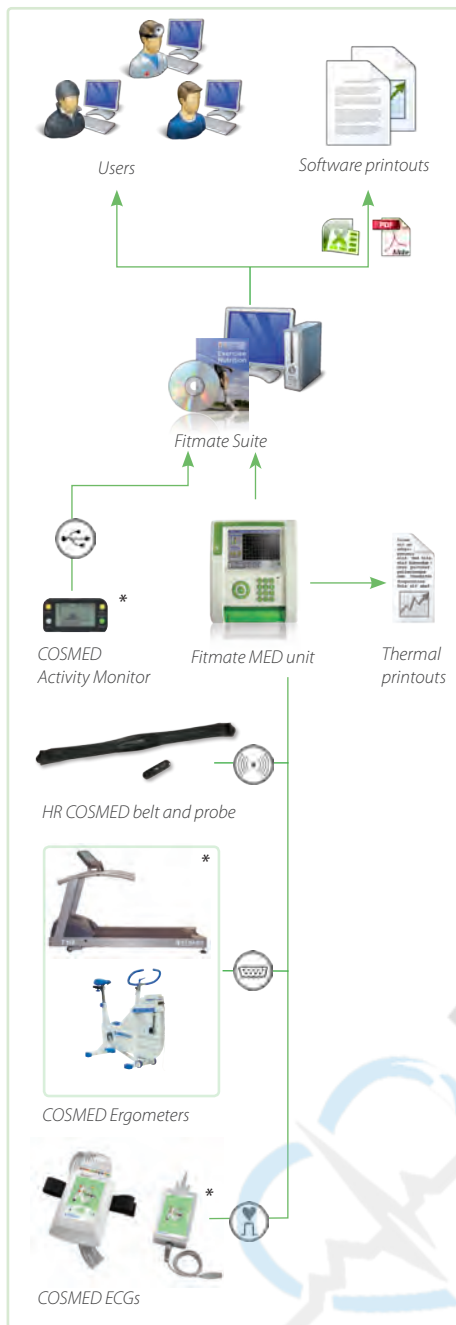
Ventilatory limitation area for easy interpretation


Peak values

Exercise capacity and exercise Intensity for cardiac rehabilitation training

Wide range of reports printable on PC (available in A4 or Letter size)

Sample of a thermal printout (original size: 110mm wide)



-  RS-232 Port
-  Wireless \*option
-  USB Port
-  TTL

Distributed by:



## Technical Specifications

Tests	w/Unit	w/Software
<b>Cardio Pulmonary Exercise Testing</b>		
Cardiorespiratory Fitness (VO <sub>2</sub> max, Anaerobic Threshold)	•	•
Automatic Control of Ergometers (Bikes or Treadmills)	•	•
HR Interface w/External ECG (TTL)	○	
Indirect Cardiac Output (Wassermann)		•
VO <sub>2</sub> /HR Training Zones (based on AT)	•	•
Exercise Intensity for Cardiac Rehabilitation		•
<b>Spirometry</b>		
Forced and Slow Vital Capacity (FVC, SVC)	•	•
Maximal Voluntary Ventilation (MVV)	•	•
Bronchial Dilator Test (Pre-Post)	•	•
<b>Cardiovascular Risk Analysis</b>		
Framingham Index	•	•
Duke Score	•	•
Bode Index	•	•
European Cardio Score	•	•
<b>Nutritional Assessment</b>		
Resting Energy Expenditure (REE, RMR)	•	
Weight Management Program (Energy Balance)	•	•
Physical Activity Monitoring (integration with accelerometer)		○
Diet Software w/Weekly Meal Planner		•
<b>Other Measurements</b>		
Body Composition (skinfold)	•	
Standard Measurements (blood pressure, WHR, resting heart rate, BMI)	•	
Integrated Pulse Oximeter (SpO <sub>2</sub> ) - resting only	○	

### Oxygen Consumption Measurements

Sensor Type	GFC (Galvanic Fuel Cell)
O <sub>2</sub> Measurement Range	0-25%
Sampling Type	Dynamic Mixing Chamber (international patent)
Sampling Rate	30 sec / 60 sec
Calibration	Automatic on room air (less than 20 seconds)
Warm-Up Time	10 seconds
Accuracy	± 2% (REE) ± 0.02% (O <sub>2</sub> )
O <sub>2</sub> Sensor Lifespan	12-18 months

Flowmeter	Ø 18mm	Ø 28mm
Type	Bidirectional Digital Turbine	Bidirectional Digital Turbine
Ventilation Range	0-50 l/min	0-300 l/min
Flow Resistance	<0.7 cmH <sub>2</sub> O/l/s @ 3l/s	<0.6 cmH <sub>2</sub> O/l/s @ 14l/s
Accuracy Flow/Volume	±2%	±2%

### Hardware

Dimensions & Weight	9.4 x 7.8 x 3.1 in (24 x 20 x 8 cm) / 3.3lb (1.5 kg)
Display (pixels)	Color LCD 320 x 240
Printer	4.7 in (12 cm) High Speed Thermal Printer

### Standard Packaging Includes

Fitmate MED unit, RMR - flowmeter, RMR masks (10 ea.), VO<sub>2</sub>max - flowmeter, silicone face mask, (size med.), head cap for silicone mask, AC/DC adapter, USB cable, Fitmate PC software (CD-Rom), mouthpieces (10 ea.), pediatric mouthpiece adapter, body meter, oxygen sensor, HR belt and probe

### Available Languages

Firmware	Italian, English, Spanish, German, French, Greek, Finnish, Dutch, Portuguese, Japanese, Chinese, Turkish, Russian, Polish, Slovenian
Software	Italian, English, Spanish, German, French, Greek, Dutch, Portuguese, Chinese, Slovenian

### Safety & Quality Standards

Equipment complies with MDD (93/42 EEC); EN 60601-1 (safety)/ EN 60601-1-2 (EMC) FDA 510(k) cleared. COSMED is an organization whose quality management system is certified by CERMET according to UNI EN ISO 9001:2008 and UNI EN ISO 13485:2004.



**COSMED USA Inc.**  
**California**  
 1850 Bates Avenue  
 Concord, CA 94520  
**Toll Free +1 800 426-3763**  
 Phone +1 (925) 676-6002  
 Fax +1 (925) 676-6005

**COSMED USA Inc.**  
**Illinois**  
 2211 North Elston Avenue #305  
 Chicago, IL 60614

**COSMED srl**  
**Headquarters**  
 Via dei Piani di Monte Savello 37  
 Rome 00041 ITALY  
 Phone +39 06 931-5492  
 Fax +39 06 931-4580

[cosmed.com](http://cosmed.com)