Technical Specification

**Main Functions**

- Oxygen Consumption
- Resting Energy Expenditure, REE
- RMR, BMR (Kcal Day)
- VO2, VE, FeO2, RF
- HR (optional)

**Measurement Time**

- 15 min (default), user defined

**Additional Testing**

- Body composition
- Weight Management Program
- Standard measurements (blood pressure, waist and hip circumferences, resting heart rate, BMI...)

**Software Features**

- Data management
- Daily caloric intake
- Cardiovascular Risks analysis
- Trends

**Oxygen Analyzer**

- Type: GFC (Galvanic Fuel Cell)
- Measurement range: 0-22%
- Calibration: Automatic on room air
- Accuracy: ±0.2%
- Lifespan: 12-18 months

**Flowmeter**

- Type: Bidirectional digital turbine Ø 18mm
- Ventilation range: 0-50 l/min
- Flow resistance: <0.7 cm H2O/l/s @ 3 l/min
- Accuracy: ±2%

**Hardware**

- Dimensions & Weight: 24 x 20 x 8 cm / 1.5kg
- Display: Color LCD 320 x 240 pixel
- Printer: High speed thermal printer (4,7 in)

**Standard Packaging**

- Includes: Fitmate unit, RMR - Flowmeter, RMR masks (10 pcs), AC/DC Adapter, USB cable, Fitmate PC Software (CD Rom), Skin-fold caliper, Body meter, Fitmate pedometer, Oxygen sensor.

**Available languages**

- Italian, English, German, Spanish, Greek, simplified Chinese, French, Dutch.

**Safety & Quality Standards**

- Equipment complies with MDD (93/42 EEC);
- EN 60601-1 (safety) / EN 60601-1-2 (EMC)
- FDA 510(k) cleared.

**Nutritional Assessment**

- The first and unique desktop system for Accurate, Quick & Simple Nutritional Assessment

- Accurate measurement of Resting Energy Expenditure (REE, RMR, BMR)

- Affordable, portable, compact and easy to use

- Built-in application for developing individual Weight Management programs

- Includes Body Composition and standard measurements

- Independently Validated vs. Gold Standard Technique
Fitmate is the first product available in the market designed for providing accurate, Resting Energy Expenditure (REE, RMR, BMR) in any field dealing with obesity and malnutrition. Before Fitmate Nutritional Assessment was only available in Hospital or big clinics. The measurement of an important component of each individual weight management program has been expensive and inconvenient. Measuring Metabolism with Fitmate is now affordable, simple and quick. Fitmate can be used in a variety of settings including:

- Clinical Nutrition, Obesity treatment, diabetes, malnutrition, preventive medicine centers.
- Commercial Weight Management, weight loss clinics.
- Health Clubs, Beauty, SPA
- Respiratory care in conjunction with obesity or malnutrition (COPD, sleep disorders).
- Catheterization lab where there is the necessity to measure Cardiac Output (Direct Fick method)
- Sport nutrition and more.

**Individual Weight Management Program**

REE value is fundamental to define a customized weight management program based on each energy balance (the difference between energy intake and expenditure). In order to calculate an individual energy balance equation Fitmate includes a powerful, user-friendly feature for elaborating the ideal program based on the optimal daily caloric intake and level of exercise. Estimation of energy expenditure related to each subject's lifestyle is possible through questionnaires or direct measurement by means of a pedometer or an activity monitor.

**Body Composition**

Body composition is one of the most important assessment to check if either diet or lifestyle changes has decreased % body fat and increased lean body mass. Fitmate handles this assessment in different ways:

- **Skinfold**: Fitmate includes a caliper for measuring skin-fold with a 3 measurement algorithm. Simply enter the data measured with a caliper and confirm. PC software allows to measure body composition with either 3 or 7 site skin-fold measurements.

**Proven Accuracy**

Fitmate has been validated against the “gold standard” Douglas Bag technique.

Fitmate Validation


Bland-Altman plot depicting absolute differences in resting metabolic rate values between the Douglas bag and Fitmate methods versus mean values (n=60, 30 males and 30 females).

Comparison of Oxygen Consumption (VO2) between the Fitmate and Douglas Bag Methods during 2 comparison tests (n=60 all subjects combined).

The validation shows a great correlation (R2= 0.9244).

**Portable, Handheld**

Battery operating and weighing less than 2 kg (5 lbs), Fitmate can be used within hospital departments or even for outpatients. Built-in printer delivers high quality reports of any assessment in just a few seconds.

**No warm-up time**

Plug it in and Fitmate is ready for use.

**Quality Control**

Fitmate displays real time data (VO2, EE,kcal/day, VE, R, FeO2, HRI) for continuous data monitoring. Warnings and quality control messages (mask leaks, inappropriate breathing pattern...) are displayed if anything wrong occurs during the test.

Fitmate uses disposable Face mask (patent) for eliminating risk of cross contamination.

**Self-Calibrating**

Fitmate calibrates in less than 20 seconds, saving time for health care professionals and eliminating the need for complex calibration procedures.

**Single patient Use Face Mask**

Designed to be comfortable and a medical-grade high efficiency antibacterial filter eliminates the risk of cross-contamination or the need of expensive and time-consuming cleaning procedures.

**No maintenance**

Fitmate does not require specialized technical service. Ordinary maintenance requires few operations (O2 sensor replacement) that can be done by the user in just a few seconds.

**PC Software**

Fitmate includes a powerful PC software running with Windows XP. Data can be downloaded from Fitmate device to a PC for data management, trends and cardiovascular risk analysis.

**Accurate Indirect Calorimetry**

Fitmate is an accurate device for indirect calorimetry. The system measures Oxygen Consumption (VO2) in real time, by means of a dynamic mixing chamber (patented) and provides averaged data on a 30 seconds (or more) basis. Testing REE is simple and fast. At the end of the test results are automatically printed out by the built-in printer.

**Data Input**

If you rely on other devices for body composition (e.g. BIA, Infrared or DEXA) you may continue using them by entering the measured value in the Fitmate dialog box. It allows the use of existing devices and benefits of a consistent way to manage the assessment reports to clients.

**Continuous Data Monitoring**

Data download on PC Software

Fitmate uses disposable Face Mask (patent) for eliminating risk of cross contamination.

The O2 sensor has to be replaced every 12-18 months.

**Fitmate Validation**

Fitmate and all the accessories are provided together with a nice and practical carrying case.

**Fitmate**

PC Software screenshots for Weight Management Program (above) and RMR - Resting Energy Expenditure (below).