Effective, simple lung screening in any environment
Founded in 1980, COSMED is a privately owned company manufacturing Cardiopulmonary and Metabolic Diagnostic Equipment.

Since its foundation, COSMED primary goal has always been to improve the quality of its products and services through innovation and superior customer service.

COSMED started in 1980 designing and manufacturing spirometers. In the late ‘80s, COSMED introduced a portable electronic desktop-sized spirometer named Pony, which was immediately successful in the European and Far East markets with more than 20,000 units sold globally. In the mid ‘90s COSMED designed the first portable metabolic analyzer, the K4. This truly innovative device broke new grounds with metabolic measurements and rapidly became the best selling oxygen measurement device in Education, Sports Science and Research.

COSMED manufactures a full range of Spirometers, Pulmonary Function, Cardio Pulmonary Exercise & Nutritional Assessment diagnostic equipment. In 2011, COSMED enhanced further its already extensive offerings with the acquisition of Life Measurement, Inc. (LMI), a leading US provider of body composition assessment equipment in infants, children and adults.

All COSMED products are designed to meet the latest recommendations and guidelines from leading scientific organizations, including American Thoracic Society (ATS), European Respiratory Society (ERS), American Heart Association (AHA) and American College of Sport Medicine (ACSM), to name a few. All COSMED products meet CE mark, IEC 60601-1/EN 60 601-1 and FDA 510(K) and other various international certifications.

COSMED is a world-wide organization with subsidiaries in the United States and representative offices in Germany, France, UK, Switzerland, China, Hong Kong and Australia, employing approximately a total of 120 full-time employees.

COSMED distribution network includes more than 80 countries.

COSMED is investing today in order to improve tomorrow technology.
Pony FX - Desktop Spirometer

Advanced desktop spirometer with digital bidirectional turbine

The Pony FX is the new generation of desktop spirometers developed by COSMED for complete spirometry testing (FVC/SVC, MVV, bronchial provocation). With a large colour LCD screen and inbuilt thermal printer, it is possible to perform tests without the need of a computer. The Pony FX has internal memory, which can store many patients/tests, and comes with a powerful and user-friendly PC software (OMNIA) for data management and real-time PC testing. Pony FX is configured with an accurate and reliable bidirectional digital turbine flowmeter. Additional optional tests include: Airway Resistance (Rocc), Respiratory Mechanics (MIP/MEP) and Pulseoximetry (SpO₂).

- Full spirometry testing (FVC, SVC, MVV, Pre/Post BD)
- Airway resistance by Occlusion Technique (option)
- Respiratory Mechanics MIP/MEP (standard with Pony FX MIP/MEP)
- Pulseoximetry with integrated high quality SpO₂ monitor (option)
- Colour LCD display with real time graphs and embedded high speed Thermal Printer
- Turbine flowmeter fully complies with ATS/ERS standards
- Provided with OMNIA software for data management, real time testing and interpretation on PC.

Standard Packaging includes

Pony FX: Main Unit, T2 turbine flowmeter, paper mouthpieces (adult & pediatric 20 pcs each), pediatric adapter, carrying case, conical mouthpiece, antibacterial filters (5 pcs), USB cable, power adapter, nose clips (2 pcs), thermal paper roll (2 pcs), PC software (OMNIA), user manual.

Pony FX MIP/MEP: Main Unit, T2 turbine flowmeter, MIP/MEP pressure line, paper mouthpieces (adult & pediatric 20 pcs each), pediatric adapter, carrying case, conical mouthpiece, AB filters (5 pcs), USB cable, power adapter, nose clips (2 pcs), thermal paper roll (2 pcs), PC software (OMNIA), user manual.

Respiratory Mechanics (MIP/MEP)

Easy to perform, quick, non-invasive. Mouth pressures recorded during these repeated maneuvers are assumed to reflect respiratory muscle strength and can be followed in real-time directly on the LCD screen.

Respiratory Resistance (Rocc)

Performed during tidal breathing through a dedicated low flow PNT mouthpiece while an occlusion valve interrupts the airflow. Ideal for low collaborative patients and good alternative to body plethysmography for airway resistance.

Integrated Pulseoximeter (SpO₂)

Oxygen desaturation and heart rate measurement with high quality integrated monitor (Nonin® technology). Low power draw (60 mW) and intelligent pulse-by-pulse filtering.
microQuark - PC-based USB Spirometer

Directly connected to a USB port turns any PC into a spirometer

microQuark is an USB spirometer designed by COSMED for complete lung function screening. It can be used with any PC, either desktop or laptop, by simply installing the powerful application software and connecting the cable to the USB port of the computer. microQuark comes with OMNIA, the new leading edge software developed entirely by COSMED, which provides an innovative and extremely intuitive user interface, touch-screen-ready, but at the same time powerful spirometry features, including comprehensive graphical and text interpretation (ATS/ERS, GOLD COPD) together with an innovative Pediatric Incentivation system.

- Full spirometry testing (FVC, SVC, MVV, Pre-Post BD, Bronchochallenge)
- Plug-and-play technology
- Independently validated turbine flowmeter by LDS Hospital using the ATS 24 standard volume-time waveforms
- User-friendly, beautiful software interface providing comprehensive graphical and text interpretation
- Full Networking and multi-language environment
- Compatible with Windows 10
- Meet latest ATS/ERS standards.

Standard Packaging includes

Main Unit, T2 flowmeter, paper mouthpieces (adult & pediatric: 20 pcs each), antibacterial filters (5 pcs), pediatric adapter, nose clips (2 pcs), PC software (OMNIA) and user manual.

Validated Digital Turbine

Independently validated turbine flowmeter by LDS Hospital using the ATS 24 standard volume-time waveforms (Crapo R. O. (LDS Hospital) 2004 "Validation of COSMED turbine vs ATS 24 standard volume-time waveforms").

Pediatric Incentivation

Possibility to perform spirometry test with a selection of innovative pediatric incentivation graphics with user defined effort grade on both volume and flow (both PEF and FVC predicted).

OMNIA Software

OMNIA allows intuitive, immediate spirometry testing with advanced text interpretation and graphical tools for quick assessment. Includes new standards and predicteds according to latest ATS/ERS guidelines (2005 Consensus, GLI, etc).
The world’s first advanced Six Minute Walk Test with integrated spirometry

Spiropalm 6MWT is a new medical device incorporating the latest design for portable spirometry and a unique tool for the standardized Six-Minute Walk Test (6MWT). The Spiropalm 6MWT gives the customer with a complete testing package with the ability to measure minute ventilation and breathing pattern during walking together with a fully integrated pulse oximeter to monitor SpO₂ and HR during the test. Spiropalm 6MWT allows full assessment of ventilation limitation due to dynamic hyperinflation and air trapping in patients with pulmonary disease. Available with USB connection for external printer and PC software for data management of spirometry tests. Fully complies with ATS/ERS guidelines for the 6MWT (2002). Product winner of the 2013 ERS “Product of Outstanding Interest” (POINT) Award.

Standard Packaging includes

- Main Unit, ID28 turbine flowmeter, flowmeter handle, paper mouthpieces (adult 10pcs, pediatric 5 pcs), pediatric adapter, antibacterial filters (10 pcs), nose clips (2 pcs), AC/DC adapter, USB cable, 6MWT kit (carrying case, pulse oximeter, silicone face mask M size, headcap, elastic belt and product holder), PC software (OMNIA) and user manual.

Validated Digital Turbine

Independently validated turbine flowmeter by LDS Hospital using the ATS 24 standard volume-time waveforms (Crapo R. O. (LDS Hospital) 2004 “Validation of COSMED turbine vs ATS 24 standard volume-time waveforms”).

Integrated Pulseoximeter (SpO₂)

Oxygen desaturation and heart rate measurement with high quality integrated monitor (Nonin® technology). Low power draw (60 mW) and intelligent pulse-by-pulse filtering.

Download 6MWT data into OMNIA

6MWT tests can be downloaded via USB on OMNIA software for advanced management, analysis and printing of results. Alternatively tests can also be printed directly with compatible printers connected via USB port.
Quark SPIRO - Stationary Spirometry

Modular Spirometry Laboratory with additional bronchial challenge and airways resistance tests

Quark SPIRO is a modern stationary laboratory for high volume spirometry testing with additional sophisticated applications, like integrated dosimeter and airway resistance. The system is modular and provides a choice of different flowmeter configurations: digital turbine or multi-use pneumotach (X9). The design architecture reduces all ordinary maintenance procedures, allowing the rapid solution of technical problems simply by replacing a board. Quark Spiro comes with OMNIA, the new leading edge software developed entirely by COSMED. The system fully complies with ATS/ERS recommendations for respiratory functionality tests.

- Full Spirometry testing (FVC, SVC, MVV, Pre/Post BD)
- Choice of different flowmeter configurations (PNT or turbine)
- Low maintenance costs, no technical expertise required
- User friendly software and advanced features with new generation OMNIA Suite
- Integrated dosimeter for accurate and easy bronchial challenge tests (optional)
- Airway resistance by Occlusion Technique (option)
- Integrated SpO₂ monitor (optional)
- Meet latest ATS/ERS standards.

Standard Packaging includes
- Unit, USB cable, power cable, nose clips (2 pcs), PC software, user manual.

Integrated Dosimeter
Integrated DeVilbiss 646 Nebulizer (resolution of 10 ms) allowing to control automatically bronchial challenge tests. Standard (ATS “Five breaths” and Lofarma) and user defined broncho challenge protocols.

Respiratory resistance (Rocc)
Performed during tidal breathing through a dedicated low flow PNT mouthpiece while an occlusion valve interrupts the airflow. Ideal for low collaborative patients and good alternative to body plethysmography for airway resistance.

OMNIA Software
OMNIA allows intuitive, immediate spirometry testing with advanced text interpretation and graphical tools for quick assessment. Includes new standards and predicteds according to latest ATS/ERS guidelines (2005 Consensus, GLI, etc.).
OMNIA - Software Suite

One integrated solution for effective Lung Function data management

OMNIA is the new software platform developed by COSMED designed for data management, interpretation and reporting of all tests performed with the entire COSMED product range, from spirometry to lung function equipment and from metabolic to body composition assessment. OMNIA, entirely designed and developed by COSMED, provides an innovative and user-friendly interface (touch-screen ready) that allows operators to navigate and access main features and testing almost without any training in a multi-language environment. OMNIA is easy to setup, and, thanks to its intuitive environment, it is extremely easy to learn. OMNIA is available in both Stand-alone and Network version, a fully featured software with Server/Client architecture.

- Intuitive, immediate, touchscreen-ready user interface
- Performs Spirometry testing (FVC, SVC, MVV and bronchial-challenge test)
- Advanced text interpretation and graphical tools for quick assessment
- Two innovative pediatric incentivations with user-defined effort grade on both PEF and FVC predicteds
- ATS, Metacholine-dose, Mannitol and user defined Bronchial-Provocation protocols
- Includes new standards and predicteds according to latest ATS/ERS guidelines (2005 Consensus, GLI, etc)
- Full Networking and multi-language environment.

Software | OMNIA
---|---
Available languages | Italian, English, Spanish, French, German, Portuguese, Greek, Dutch, Turkish, Russian, Chinese (Traditional & Simplified), Korean, Romanian, Polish, Czech, Norwegian, Hebrew
PC Configuration | I3 or higher processor speed. Compatible with Windows 7, 8, 8.1, 10 (32 or 64 bit). RAM 4GB (8GB recommended). HD with 4GB of free space (plus tools)
Spirometry Predicted Values | 2012 Global Lung initiative (GLI), ERS 1993 (ECCS 1983), NHANES III, Knudson 83, ECCS 1971, ITS, Zapletal, LAM, Pneumobil, Gutierrez (Chile), Multicentrico
Barcelona, Thai 2000, Austria (Forche), Crapo 1981 user defined predicted calculations.
Interpretation | Automatic and comprehensive, with statements based on: ATS/ERS 2005 (Spirometry), GOLD COPD, ATS/ERS 2005 (Obstruction Reversibility based on FVC Post BD), ATS/ERS 2007 (Obstruction Reversibility based on Rocc)
Optional Modules | A-670-100-008 OMNIA GDT Module
GDT data exchange interface. It guarantees integration with other hospital/primary care patient data management software, allowing thus patient data import and results export (PDF, txt) directly through the EDP file card, from each workstation in the network
CO4180-01-11 OMNIA Network 1.x e-license (5 users)
Networking license allows client/server large set-up for both testing or data management. OMNIA Network includes 5 clients (simultaneous access). Requires Microsoft SQL server (Express 2008 R2 SP1 or Standard edition 2008 R2 SP1)
A-670-100-007 OMNIA Network (additional license)
Additional single license for OMNIA Network
### Product Comparison Matrix

<table>
<thead>
<tr>
<th>Technology</th>
<th>microQuark</th>
<th>Pony FX</th>
<th>Pony FX Mip/Mep</th>
<th>Spiropalm 6MWT</th>
<th>Quark Spiro</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spirometer Type</td>
<td>PC based</td>
<td>Desktop</td>
<td>Desktop</td>
<td>Handheld</td>
<td>Stationary</td>
</tr>
<tr>
<td>Flowmeter</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Characteristics</td>
<td>Digital Bidirectional Turbine</td>
<td>Digital Bidirectional Turbine</td>
<td>Digital Bidirectional Turbine</td>
<td>Digital Bidirectional Turbine</td>
<td>Multi-use Pneumotach (Lilly)</td>
</tr>
<tr>
<td>Accuracy</td>
<td>±2% or 20 ml/s</td>
<td>±2% or 20 ml/s</td>
<td>±2% or 20 ml/s</td>
<td>±2% or 20 ml/s</td>
<td>±2% or 20 ml/s</td>
</tr>
<tr>
<td>Flow Range</td>
<td>0-16 l/s</td>
<td>0-16 l/s</td>
<td>0-16 l/s</td>
<td>0-16 l/s</td>
<td>0-14 l/sec</td>
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<tr>
<td>Ventilation Range (MVV - Exercise)</td>
<td>0-300 l/min</td>
<td>0-300 l/min</td>
<td>0-300 l/min</td>
<td>0-300 l/min</td>
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</tr>
<tr>
<td>Resolution</td>
<td>12 ml</td>
<td>12 ml</td>
<td>12 ml</td>
<td>12 ml</td>
<td>1 ml</td>
</tr>
<tr>
<td>Resistance</td>
<td>&lt;0.6 cmH2O/l/s @14l/s</td>
<td>&lt;0.6 cmH2O/l/s @14l/s</td>
<td>&lt;0.6 cmH2O/l/s @14l/s</td>
<td>&lt;0.6 cmH2O/l/s @14l/s</td>
<td>&lt;1.0 cmH2O/l/s @ 14 l/s</td>
</tr>
<tr>
<td>Calibration</td>
<td>w/ 3L Syringe</td>
<td>w/ 3L Syringe</td>
<td>w/ 3L Syringe</td>
<td>w/ 3L Syringe</td>
<td>w/ 3L Syringe</td>
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<tr>
<td>Printing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Built-in high-speed thermal printer (110mm)</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Direct USB connection w/ external printer (HP PCL-3 compatible)</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>PC printer (through software)</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Hardware</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Display</td>
<td>PC monitor</td>
<td>Colour LCD 320x240 pixel</td>
<td>Colour LCD 320x240 pixel</td>
<td>LCD B&amp;W 320x240 pixel</td>
<td>PC monitor</td>
</tr>
<tr>
<td>Interfaces</td>
<td>USB</td>
<td>USB/RS232</td>
<td>USB/RS232</td>
<td>USB</td>
<td>USB/RS-232</td>
</tr>
<tr>
<td>Memory capacity</td>
<td>PC limited</td>
<td>400-600 tests</td>
<td>400-600 tests</td>
<td>400-600 tests</td>
<td>PC limited</td>
</tr>
<tr>
<td>Batteries Autonomy (operating mode)</td>
<td>5 hours</td>
<td>5 hours</td>
<td>6 hours</td>
<td>6 hours</td>
<td></td>
</tr>
<tr>
<td>Electrical Requirements</td>
<td>USB (5V)</td>
<td>AC/DC 100-240V</td>
<td>AC/DC 100-240V</td>
<td>AC/DC 100-240V</td>
<td>AC/DC 100-240V</td>
</tr>
<tr>
<td>Dimensions (cm)</td>
<td>50x4.5x53</td>
<td>20x2.8x7.6</td>
<td>20x2.8x7.6</td>
<td>20x2.8x7.6</td>
<td>33x41x16</td>
</tr>
<tr>
<td>Weight (gr)</td>
<td>77</td>
<td>1,200</td>
<td>1,200</td>
<td>600</td>
<td>6,000</td>
</tr>
<tr>
<td>Software</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PC Software (OMNIA)</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Available languages</td>
<td>Italian, English, Spanish, French, German, Portuguese, Greek, Dutch, Turkish, Russian, Chinese (Traditional &amp; Simplified), Korean, Romanian, Polish, Czech, Norwegian, Hebrew</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PC Configuration</td>
<td>I3 or higher processor speed. Compatible with Windows 7, 8, 8.1, 10 (32 or 64 bit). RAM 4GB (8GB recommended). HD with 10GB of free space</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Predicted Values (partial listing)</td>
<td>2012 Global Lung initiative (GULI), ERS 1993 (ECCS 1983), NHANES III, Knudson 83, ECCS 1971, ITS, Zapletal, LAM, Pneumobil, Gutierrez (Chile), Multicentrico Barcelona, Thai 2000, Austria (Forche), Crapo 1981 user defined predicted calculations.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Automatic Interpretation</td>
<td>ATS/ERS 2005 (Spirometry), GOLD COPD, ATS/ERS 2005 (Obstruction Reversibility based on FVC Post BD), ATS/ERS 2007 (Obstruction Reversibility based on Rocc)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Tests

#### Spirometry
- Forced/Slow Vital Capacity (SVC-FVC)
- Maximum Voluntary Ventilation (MVV)
- Bronchial Challenge Test (Pre-Post)
- Bronchial Challenge Test with integrated dosimeter
- Airway Resistance (Rocc/Rinr)
- Respiratory Mechanics (MIP/MEP)
- Six Minute Walk Test (6MWT)
- Oxygen Saturation (SpO2, HR) w/ Nonin ipod

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